The Copenhagen tracer experiments: Reporting of measurements

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Publication date:
2002

Document Version
Publisher's PDF, also known as Version of record

Risø-R-1054(rev.1)(EN)

The Copenhagen Tracer Experiments: Reporting of Measurements

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August 2002

Abstract This is the comprehensive data report from a series of tracer experiment carried out in the Copenhagen area in 1978/79 under neutral and unstable atmospheric conditions. The report contains sulphurhexafluoride of tracer concentrations and meteorological measurements The tracer was released without buoyancy from a tower at a height of 115 meters and then collected 2-3 meters above ground-level at positions in up to three crosswind arcs of tracer sampling units, positioned 2-6 km from the point of release. Three consecutive 20 min averaged tracer concentrations were measured, allowing for a total sampling time of 1 hour. The site was mainly residential having a roughness length of 0.6 m. The meteorological measurements performed during the experiments included standard measurements along the tower of tracer release as well as the three-dimensional wind velocity fluctuations at the height of release.

ISBN 87-550-3101-3
ISSN 0106-2840

Information Service Department, Risø, 2002

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General characteristics for the experiments

The tracer sulphurhexafluoride was released without buoyancy from a tower at a height of 115 meters and then collected 2-3 meters above ground-level at positions in up to three crosswind arcs of tracer sampling units, positioned 2-6 km from the point of release. Three consecutive 20 min averaged tracer concentrations were measured, allowing for a total sampling time of 1 hour. The site was mainly residential having a roughness length of 0.6 m. The meteorological measurements performed during the experiments included standard measurements along the tower of tracer release as well as the three-dimensional wind velocity fluctuations at the height of release.
This report has its main focus on the measurements and only marginal emphasis is given to the technical and scientific aspects of the experiments. The report is not meant as being self-contained. The report is available as a Word document upon request. Detailed information on the technical and scientific aspects of the experiments are given in:

1. Gryning, S.E. (1981): *Elevated Source SF_6-Tracer Dispersion Experiments in the Copenhagen Area.* Risø-R-446. Risø National Laboratory, 187 pp.
2. Gryning, S.E. and Lyck E. (1984): Atmospheric Dispersion from Elevated Sources in an Urban Area. Comparison between Tracer Experiments and Model Calculations. *J. Appl. Meteor*., **23**, 651-660.
3. Gryning, S.E., Holtslag, A.A.M., Irwin, J.S. and Sivertsen, B. (1987): Applied dispersion modelling based on meteorological scaling parameters. *Atmos. Environ***., 21**, 79-89.
4. Olesen, H.R. (1995): *Model Validation Kit for the Workshop on Operational Short-Range Atmospheric Dispersion Models for Environmental Impact Assessments in Europe*. Available from H. Olesen, National Environmental Research Institute, P.O.Box 358, DK-4000-Roskilde, Denmark

The data have been extensively used at a series of workshops and conferences on *Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, which started 1992. Up-to-date information on these workshops is available through http://www.dmu.dk/AtmosphericEnvironment/harmoni.htm. The web site included a list of papers presented during the conferences, some of which deal with modelling of the *Copenhagen dataset.*
On August 2002 the report was extended with longer time series of the standard meteorological measurements along the tower of release. The period of tracer release was added to Table 1.

Table 1. Some characteristics for the tracer experiments. The tracer (SF_6) was released from a height of 115 meters. Time indications are in GMT+1.

Experiment 1978/1979	Start/stop of tracer release	Start/stop of tracer sampling	Assigned distance to tracer sampling arcs (km)	Tracer release rate Q (g/s)	Lateral spread σ_y (m)	Crosswind-integrated concentration χ_{CWI}/Q (10^{-4} s/m^2)
September 14	15:00-16:25	15:23-16:23	3.9	4.7	375	5.02
September 20	12:45-14:17	13:17-14:17	1.9	3.2	254	6.48
			3.7		444	2.31
September 26	11:21-12:40	11:40-12:40	2.1	3.2	239	5.38
			4.2		438	2.95
October 19	11:47-13:18	12:13-13:13	1.9	3.2	184	8.20
			3.7		283	6.22
			5.4		404	4.30
November 3	13:02-14:21	13:20-14:20	4.0	2.3	301	11.66
November 9	12:46-14:27	13:26-14:26	2.1	3.2	185	6.72
			4.2		279	5.84
			6.1		376	4.97
April 30	12:41-14:02	13:02-13:42	2.0	3.1		3.96
			4.2			2.22
			5.9			1.83
June 27	12:25-13:45	12:45-13:45	2.0	2.4	290	6.70
			4.1		595	3.25
			5.3		786	2.23
July 6	12:30-13:55	12:50-13:50	1.9	3.0	190	4.16
			3.6		402	2.02
			5.3		580	1.52
July 19	11:50-13:20	12:15-13:18	2.1	3.3	236	4.58
			4.2		460	3.11
			6.0		623	2.59

The tracer was released from a height of 115 meters at the position (UTM-East, UTM-North) = (342580, 6179610). The co-ordinates refer to UTM-zone 33 with units in meters.

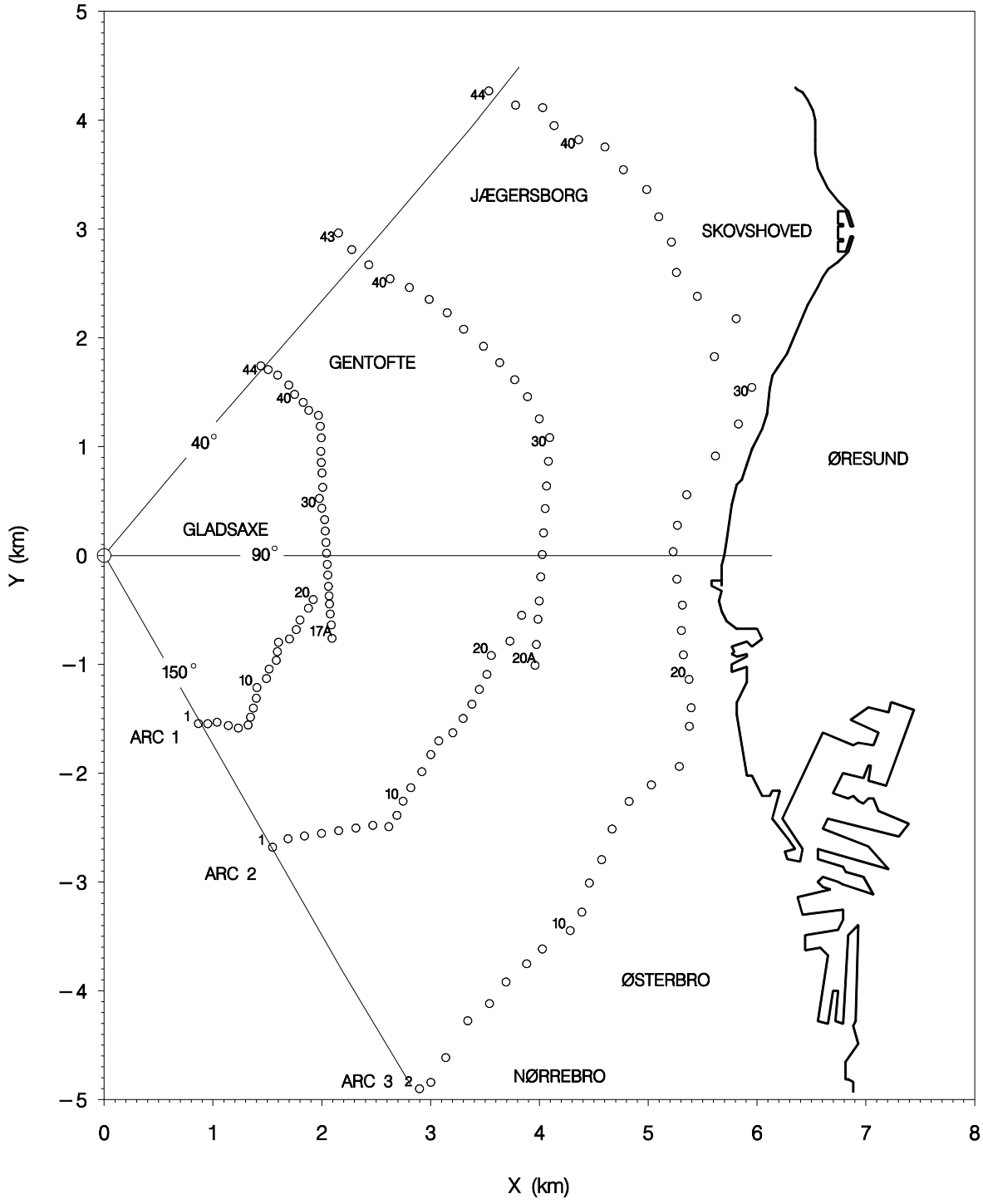

Figure 1. The area for the tracer experiments. The x-axis is pointing towards East, the y-axis towards North and the sampling unit positions are indicated by circles. The positions are distributed in 3 arcs, Table 2-4. The tracer was released at 115 metres height at the position (x,y)=(0,0). Typically 20 tracer sampling units were used in each arc. The full line indicates the coastline to the strait of Øresund.

Table 2. Co-ordinates of the possible sampling unit positions. x indicates distance East of the point of release, y North of the point of release and the UTM co-ordinates refer to zone-33.

Arc1:

Position	x (m)	y (m)	UTM-East (m)	UTM-North (m)
1	866	-1545	343387	6178033
2	952	-1546	343473	6178029
3	1038	-1532	343559	6178040
4	1141	-1563	343661	6178005
5	1233	-1586	343752	6177978
6	1323	-1558	343843	6178003
7	1345	-1486	343868	6178074
8	1371	-1403	343897	6178156
9	1398	-1312	343927	6178246
10	1404	-1214	343937	6178343
11	1492	-1131	344028	6178423
12	1516	-1044	344055	6178509
13	1582	-964	344124	6178587
14	1592	-884	344137	6178666
15	1602	-798	344150	6178752
16	1703	-767	344253	6178779
17	1766	-681	344319	6178862
18	1800	-593	344356	6178949
19	1877	-485	344437	6179054
20	1921	-405	344484	6179132
21	2067	-371	344631	6179161
22	2061	-284	344629	6179248
23	2055	-180	344627	6179352
24	2050	-82	344625	6179450
25	2044	20	344623	6179552
26	2038	119	344621	6179651
27	2032	225	344619	6179758
28	2026	329	344617	6179862
29	2000	434	344595	6179968
30	1978	524	344577	6180058
31	2008	626	344610	6180159
32	2002	758	344609	6180291
33	1996	854	344607	6180387
34	1991	956	344606	6180490
35	1995	1081	344615	6180614
36	1986	1187	344610	6180721
37	1969	1287	344597	6180821
38	1880	1333	344509	6180871
39	1829	1407	344461	6180946
40	1750	1480	344385	6181022
41	1697	1566	344335	6181110
42	1594	1657	344236	6181205
43	1507	1708	344151	6181259
44	1440	1742	344085	6181296
17A	2094	-761	344644	6178770
18A	2087	-638	344641	6178893
19A	2078	-538	344636	6178993
20A	2071	-446	344633	6179086

Table 3. Co-ordinates of the possible sampling unit positions. x indicates distance East of the point of release, y North of the point of release and the UTM co-ordinates refer to zone-33.

Arc2:

Position	x (m)	y (m)	UTM-East (m)	UTM-North (m)
1	1548	-2681	344025	6176872
2	1690	-2603	344170	6176945
3	1841	-2578	344322	6176964
4	1998	-2554	344479	6176982
5	2155	-2529	344637	6177001
6	2313	-2505	344796	6177019
7	2469	-2480	344953	6177038
8	2616	-2492	345099	6177020
9	2691	-2388	345178	6177121
10	2747	-2258	345239	6177249
11	2818	-2134	345315	6177370
12	2920	-1987	345422	6177513
13	3002	-1830	345510	6177667
14	3075	-1704	345588	6177790
15	3204	-1629	345720	6177860
16	3299	-1498	345820	6177988
17	3380	-1367	345906	6178115
18	3448	-1231	345979	6178249
19	3518	-1093	346054	6178384
20	3558	-919	346100	6178556
21	3729	-787	346276	6178682
22	3837	-550	346393	6178914
23	3998	-418	346559	6179040
24	4012	-196	346582	6179262
25	4026	9	346603	6179466
26	4038	208	346623	6179664
27	4053	431	346646	6179887
28	4066	638	346667	6180093
29	4083	865	346693	6180319
30	4094	1083	346712	6180536
31	3999	1255	346624	6180712
32	3891	1459	346524	6180920
33	3773	1615	346412	6181080
34	3635	1772	346280	6181242
35	3486	1922	346137	6181398
36	3304	2079	345961	6181562
37	3152	2230	345815	6181718
38	2987	2353	345654	6181848
39	2805	2462	345477	6181964
40	2628	2543	345303	6182051
41	2432	2671	345112	6182187
42	2275	2811	344960	6182332
43	2153	2963	344844	6182489
20A	3960	-1009	346499	6178451
21A	3972	-818	346518	6178642
22A	3987	-586	346542	6178873

Table 4. Co-ordinates of the possible sampling unit positions. x indicates distance East of the point of release, y North of the point of release and the UTM co-ordinates refer to zone-33.

Arc3:

Position	x (m)	y (m)	UTM-East (m)	UTM-North (m)
2	2898	-4900	345290	6174603
3	3002	-4842	345396	6174657
4	3139	-4614	345541	6174880
5	3342	-4276	345757	6175210
6	3541	-4118	345962	6175360
7	3693	-3919	346121	6175553
8	3883	-3752	346317	6175713
9	4027	-3616	346467	6175843
10	4283	-3447	346729	6176003
11	4390	-3277	346842	6176168
12	4459	-3010	346921	6176433
13	4572	-2795	347042	6176643
14	4668	-2514	347149	6176920
15	4824	-2260	347315	6177168
16	5029	-2108	347525	6177312
17	5286	-1939	347788	6177471
18	5378	-1570	347894	6177837
19	5395	-1399	347918	6178007
20	5375	-1139	347908	6178267
21	5323	-913	347864	6178495
22	5305	-690	347855	6178719
23	5314	-456	347873	6178952
24	5264	-218	347832	6179192
25	5229	35	347807	6179446
26	5268	277	347855	6179686
27	5354	558	347951	6179964
28	5618	914	348229	6180310
29	5829	1208	348451	6180595
30	5952	1544	348586	6180926
31	5608	1827	348253	6181222
32	5809	2176	348468	6181563
33	5451	2381	348118	6181782
34	5259	2601	347934	6182009
35	5213	2880	347899	6182290
36	5097	3112	347792	6182526
37	4986	3363	347690	6182781
38	4772	3545	347483	6182971
39	4602	3754	347321	6183186
40	4361	3821	347083	6183262
41	4135	3950	346862	6183400
42	4030	4115	346764	6183569
43	3781	4138	346516	6183601
44	3535	4269	346275	6183741

Table 5. Parameters describing the meteorological conditions during the experiments. The methods that were used to determine the parameters are described in Gryning (1981). The symbol "*" indicates that the parameter was impossible to determine.

Experiment 1978/1979	Monin-Obukhov length (m)	Friction velocity from windprofile (m/s)	Standard deviation of wind velocity at 115 m height		Pasquill stability class	Inversion height (m)
			Lateral σ_v (m/s)	Vertical σ_w (m/s)		
September 14	*	*	1.14	0.68	D	*
September 20	-46	0.37	0.98	0.83	C	1980
September 26	-384	0.74	1.39	1.07	C	1920
October 19	-108	0.39	0.85	0.68	C	1120
November 3	-173	0.39	0.47	0.47	C	390
November 9	-577	0.46	0.77	0.71	C	820
April 30	-569	1.07	2.26	1.33	D	1300
June 27	-136	0.65	1.61	0.87	B-C	1850
July 6	-72	0.70	1.35	0.72	B-C	810
July 19	-382	0.77	1.71	0.98	D	2090

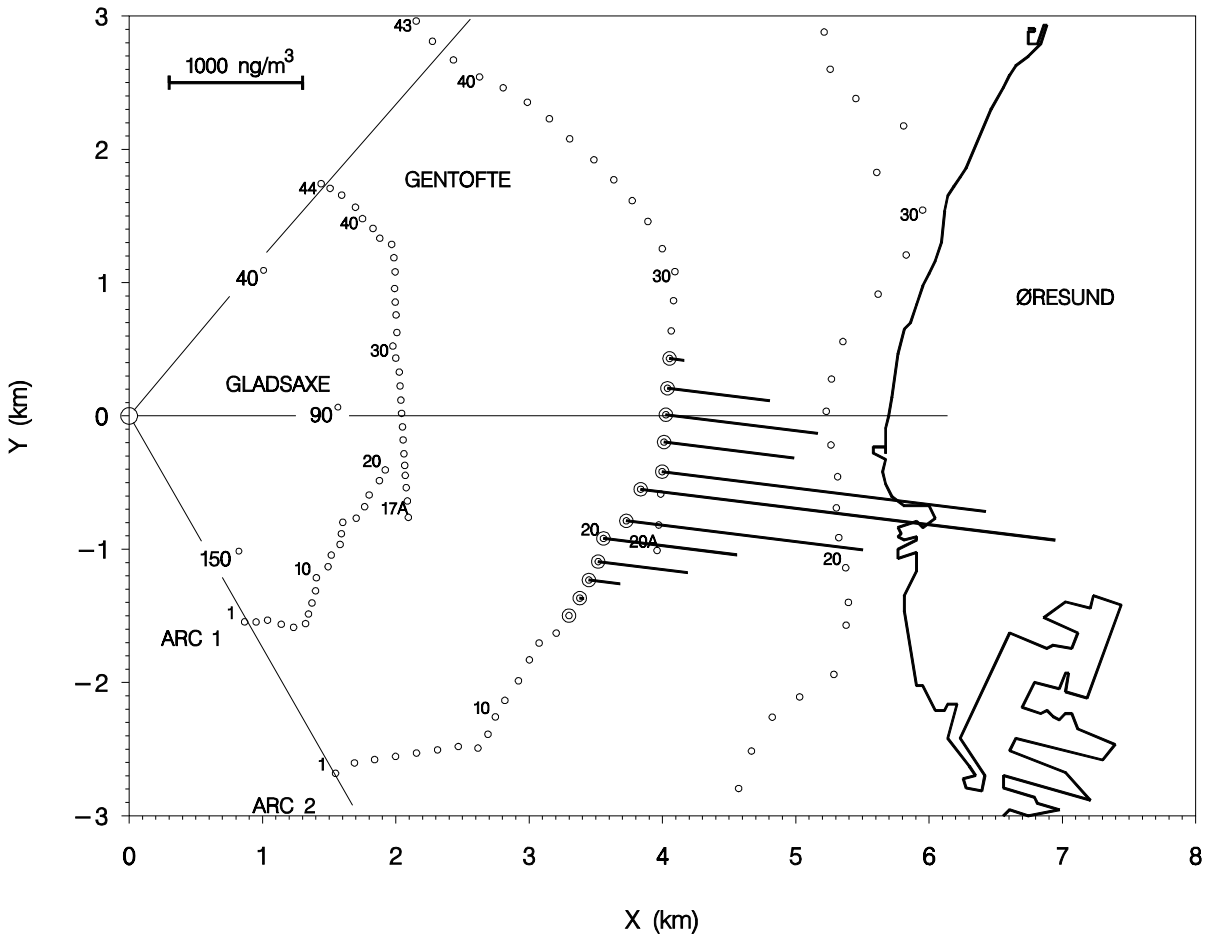

Figure 2. Experiment on September 14, 1978. The bars indicate the mean measured tracer concentrations for the period 15:23-16:23 (run 1-3, Table 6), for the individual measuring positions.

Table 6. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on September 14, 1978, Arc 2

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
16	0	0	0	0	
					140
17	0	86	0	29	
					144
18	0	702	0	234	
					146
19	14	2007	0	674	
					178
20	151	2813	54	1006	
					153
21	2347	2562	-	1785	
					249
22	5304	2939	1147	3130	
					152
23	3960	2007	1362	2443	
					222
24	530	493	1917	980	
					205
25	14	0	3422	1146	
					199
26	0	0	2311	770	
					223
27	0	0	323	108	
sampling period	15:23-15:43	15:43-16:03	16:03-16:23	15:23-16:23	

Direction of the plume centreline: 277 degrees
Plume centre position (x,y) = (3897, -501)

Table 7. Meteorological measurements along the tower at the point of release.

Experiment on September 14, 1978

Time	Temperature (deg Celcius) height						Wind-speed (m/s) height				Wind-direction (deg/10) height		
	200 (m)	160 (m)	120 (m)	80 (m)	40 (m)	2 (m)	200 (m)	120 (m)	60 (m)	10 (m)	200 (m)	120 (m)	10 (m)
0:05	13.7	13.9	14.4	14.4	14.6	14.9	10.3	-9.9	6.7	-9.9	-99	25	-99
0:15	13.7	14.0	14.4	14.5	14.7	14.9	10.3	-9.9	6.2	-9.9	-99	25	-99
0:25	13.8	14.0	14.5	14.5	14.7	15.0	9.8	-9.9	6.2	-9.9	-99	25	-99
0:35	13.8	14.0	14.5	14.6	14.7	15.0	10.3	-9.9	6.2	-9.9	-99	24	-99
0:45	13.9	14.1	14.6	14.6	14.8	15.0	10.3	-9.9	6.2	-9.9	-99	25	-99
0:55	13.9	14.1	14.6	14.6	14.8	15.0	9.8	-9.9	6.2	-9.9	-99	25	-99
1:05	13.9	14.1	14.5	14.6	14.8	15.1	9.8	-9.9	6.2	-9.9	-99	25	-99
1:15	13.9	14.1	14.5	14.7	14.9	15.1	10.3	-9.9	6.2	-9.9	-99	25	-99
1:25	13.9	14.2	14.5	14.7	14.9	15.2	10.3	-9.9	6.7	-9.9	-99	25	-99
1:35	14.0	14.2	14.5	14.8	15.0	15.2	10.8	-9.9	7.2	-9.9	-99	25	-99
1:45	14.0	14.3	14.6	14.8	15.0	15.3	11.3	-9.9	7.7	-9.9	-99	25	-99
1:55	14.1	14.3	14.6	14.9	15.1	15.4	11.8	-9.9	8.2	-9.9	-99	25	-99
2:05	14.1	14.3	14.6	15.0	15.2	15.4	12.4	-9.9	8.2	-9.9	-99	25	-99
2:15	14.1	14.4	14.7	15.0	15.3	15.5	11.8	-9.9	7.7	-9.9	-99	25	-99
2:25	14.1	14.4	14.7	15.0	15.2	15.5	11.8	-9.9	8.2	-9.9	-99	25	-99
2:35	14.1	14.4	14.8	15.1	15.3	15.5	11.8	-9.9	8.2	-9.9	-99	25	-99
2:45	14.2	14.5	14.8	15.1	15.3	15.5	12.4	-9.9	8.2	-9.9	-99	25	-99
2:55	14.1	14.5	14.8	15.1	15.2	15.4	11.8	-9.9	7.2	-9.9	-99	25	-99
3:05	14.1	14.4	14.7	15.0	15.2	15.5	10.8	-9.9	7.2	-9.9	-99	24	-99
3:15	14.1	14.4	14.7	15.0	15.2	15.5	11.3	-9.9	7.2	-9.9	-99	25	-99
3:25	14.2	14.5	14.8	15.1	15.3	15.5	11.8	-9.9	7.2	-9.9	-99	25	-99
3:35	14.1	14.5	14.8	15.1	15.3	15.5	11.3	-9.9	7.2	-9.9	-99	24	-99
3:45	14.1	14.5	14.7	15.1	15.3	15.5	11.3	-9.9	6.7	-9.9	-99	24	-99
3:55	14.2	14.5	14.8	15.1	15.3	15.6	11.3	-9.9	6.7	-9.9	-99	24	-99
4:05	14.1	14.5	14.8	15.1	15.3	15.6	11.3	-9.9	7.2	-9.9	-99	23	-99
4:15	14.1	14.4	14.7	15.0	15.3	15.6	11.3	-9.9	7.2	-9.9	-99	23	-99
4:25	14.1	14.4	14.7	15.0	15.2	15.6	11.3	-9.9	6.7	-9.9	-99	24	-99
4:35	14.1	14.4	14.7	15.0	15.3	15.6	11.3	-9.9	7.2	-9.9	-99	24	-99
4:45	14.1	14.4	14.7	15.0	15.3	15.6	11.8	-9.9	7.2	-9.9	-99	24	-99
4:55	14.2	14.5	14.8	15.1	15.4	15.7	11.8	-9.9	7.7	-9.9	-99	24	-99
5:05	14.1	14.5	14.8	15.1	15.3	15.7	10.8	-9.9	6.7	-9.9	-99	24	-99
5:15	14.1	14.5	14.8	15.1	15.3	15.7	10.8	-9.9	6.7	-9.9	-99	24	-99
5:25	14.2	14.5	14.8	15.1	15.3	15.7	10.8	-9.9	6.7	-9.9	-99	24	-99
5:35	14.2	14.5	14.9	15.1	15.3	15.7	10.8	-9.9	6.7	-9.9	-99	24	-99
5:45	14.3	14.5	14.9	15.1	15.3	15.7	10.8	-9.9	6.7	-9.9	-99	24	-99
5:55	14.2	14.5	14.9	15.1	15.3	15.7	11.3	-9.9	7.2	-9.9	-99	24	-99
6:05	14.3	14.5	14.9	15.1	15.3	15.7	11.8	-9.9	7.2	-9.9	-99	24	-99
6:15	14.3	14.5	14.9	15.1	15.3	15.7	11.8	-9.9	7.7	-9.9	-99	24	-99
6:25	14.3	14.6	14.9	15.1	15.3	15.8	12.4	-9.9	7.7	-9.9	-99	23	-99
6:35	14.3	14.6	15.0	15.1	15.4	15.8	12.4	-9.9	8.2	-9.9	-99	23	-99
6:45	14.3	14.6	15.0	15.1	15.4	15.8	12.4	-9.9	7.7	-9.9	-99	23	-99
6:55	14.3	14.6	15.0	15.1	15.4	15.8	12.4	-9.9	7.7	-9.9	-99	24	-99
7:05	14.3	14.6	15.0	15.1	15.4	15.8	11.3	-9.9	7.2	-9.9	-99	24	-99
7:15	14.4	14.6	15.0	15.1	15.4	15.8	10.8	-9.9	7.2	-9.9	-99	24	-99
7:25	14.4	14.6	15.0	15.1	15.4	15.8	10.8	-9.9	6.7	-9.9	-99	23	-99
7:35	14.4	14.6	15.0	15.1	15.4	15.8	10.8	-9.9	7.2	-9.9	-99	23	-99
7:45	14.4	14.6	15.1	15.2	15.4	15.9	-9.9	-9.9	-9.9	-9.9	-99	22	22
7:55	14.5	14.7	15.1	15.2	15.5	15.9	8.7	-9.9	5.1	-9.9	-99	22	21

8:05	14.5	14.8	15.2	15.3	15.5	16.0	10.8	-9.9	7.2	-9.9	-99	23	22
8:15	14.5	14.8	15.3	15.3	15.6	16.0	11.3	-9.9	7.7	-9.9	-99	23	22
8:25	14.6	14.8	15.3	15.3	15.6	16.1	11.3	-9.9	8.2	-9.9	-99	23	21
8:35	14.6	14.8	15.3	15.4	15.7	16.1	12.4	-9.9	8.2	-9.9	-99	23	21
8:45	14.6	14.8	15.3	15.4	15.7	16.1	12.4	-9.9	8.2	-9.9	-99	23	21
8:55	14.6	14.9	15.4	15.4	15.7	16.2	12.9	-9.9	8.2	-9.9	-99	23	24
9:05	14.6	14.9	15.4	15.5	15.7	16.2	12.4	-9.9	8.7	-9.9	-99	23	21
9:15	14.6	14.9	15.4	15.5	15.7	16.2	12.9	-9.9	8.7	-9.9	-99	23	22
9:25	14.7	14.9	15.4	15.5	15.8	16.2	12.9	-9.9	8.7	-9.9	-99	23	22
9:35	14.7	14.9	15.5	15.6	15.9	16.3	12.9	-9.9	8.7	-9.9	-99	23	21
9:45	14.7	14.9	15.5	15.6	15.8	16.3	13.4	-9.9	9.3	-9.9	-99	23	23
9:55	14.7	14.9	15.5	15.5	15.8	16.2	13.9	-9.9	10.3	-9.9	-99	24	22
10:05	14.6	14.9	15.5	15.6	15.8	16.2	13.4	-9.9	9.3	-9.9	-99	23	22
10:15	14.6	14.8	15.5	15.6	15.8	16.2	13.9	-9.9	9.8	-9.9	-99	24	23
10:25	14.6	14.8	15.4	15.6	15.8	16.2	13.4	-9.9	9.8	-9.9	-99	24	23
10:35	14.5	14.7	15.4	15.6	15.8	16.1	13.4	-9.9	10.3	-9.9	-99	25	24
10:45	14.5	14.7	15.4	15.5	15.7	16.1	12.9	-9.9	10.3	-9.9	-99	25	24
10:55	14.5	14.7	15.3	15.4	15.7	16.0	12.9	-9.9	9.3	-9.9	-99	25	24
11:05	14.4	14.7	15.2	15.4	15.6	16.0	11.3	-9.9	8.2	-9.9	-99	25	24
11:15	14.4	14.7	15.2	15.3	15.6	16.0	11.3	-9.9	7.7	-9.9	-99	25	25
11:25	14.4	14.7	15.2	15.4	15.6	16.0	11.3	-9.9	7.7	-9.9	-99	24	23
11:35	14.4	14.7	15.2	15.4	15.6	16.0	10.3	-9.9	7.7	-9.9	-99	25	28
11:45	14.4	14.8	15.3	15.4	15.6	15.9	10.8	-9.9	7.7	-9.9	-99	24	23
11:55	14.4	14.7	15.2	15.3	15.5	15.9	10.8	-9.9	7.2	-9.9	-99	24	24
12:05	14.4	14.7	15.1	15.3	15.5	15.9	11.3	-9.9	7.2	-9.9	-99	24	22
12:15	14.4	14.7	15.2	15.3	15.6	15.9	11.8	-9.9	7.7	-9.9	-99	24	24
12:25	14.4	14.8	15.2	15.3	15.6	15.9	11.3	-9.9	8.2	-9.9	-99	25	25
12:35	14.4	14.7	15.2	15.3	15.5	15.9	11.3	-9.9	7.7	-9.9	-99	25	24
12:45	14.3	14.7	15.1	15.3	15.5	16.0	10.3	-9.9	6.7	-9.9	-99	25	23
12:55	14.3	14.7	15.1	15.2	15.5	16.0	10.3	-9.9	6.7	-9.9	-99	25	23
13:05	14.3	14.7	15.2	15.3	15.6	16.0	10.3	-9.9	7.2	-9.9	-99	25	24
13:15	14.3	14.8	15.2	15.3	15.6	16.0	10.8	-9.9	7.7	-9.9	-99	24	24
13:25	14.3	14.6	15.1	15.3	15.5	15.9	10.3	-9.9	7.2	-9.9	-99	24	23
13:35	14.0	14.4	14.8	15.0	15.3	15.7	10.8	-9.9	6.7	-9.9	-99	23	22
13:45	13.8	14.1	14.6	14.7	15.0	15.4	10.8	-9.9	7.2	-9.9	-99	23	22
13:55	13.6	14.0	14.4	14.5	14.8	15.3	11.8	-9.9	7.7	-9.9	-99	24	22
14:05	13.6	13.9	14.3	14.5	14.7	15.2	11.8	-9.9	8.2	-9.9	-99	24	24
14:15	13.6	13.9	14.3	14.4	14.7	15.1	12.4	-9.9	8.7	-9.9	-99	24	23
14:25	13.5	13.9	14.3	14.5	14.7	15.1	11.8	-9.9	8.7	-9.9	-99	24	25
14:35	13.6	13.9	14.3	14.5	14.7	15.1	11.8	-9.9	8.2	-9.9	-99	24	24
14:45	13.5	13.9	14.3	14.5	14.7	15.0	11.3	-9.9	7.7	-9.9	-99	24	24
14:55	11.7	12.5	13.2	13.4	13.8	14.4	13.9	-9.9	10.3	-9.9	-99	29	29
15:05	11.7	12.5	13.0	13.3	13.5	13.8	14.9	-9.9	10.3	-9.9	-99	30	29
15:15	11.8	12.4	12.8	13.1	13.2	13.5	14.4	-9.9	10.8	-9.9	-99	30	28
15:25	12.0	12.4	12.8	13.1	13.2	13.5	12.9	-9.9	9.8	-9.9	-99	29	27
15:35	11.7	12.0	12.5	12.8	13.1	13.6	12.9	-9.9	9.3	-9.9	-99	29	28
15:45	12.0	12.3	12.7	13.0	12.9	13.2	12.9	-9.9	9.3	-9.9	-99	30	29
15:55	12.1	12.4	12.8	13.0	13.0	13.4	11.8	-9.9	7.7	-9.9	-99	29	28
16:05	12.0	12.4	12.8	13.1	13.2	13.6	10.8	-9.9	7.7	-9.9	-99	28	28
16:15	11.9	12.3	12.7	13.0	13.2	13.5	9.8	-9.9	7.2	-9.9	-99	29	28
16:25	11.9	12.3	12.7	13.0	13.1	13.6	9.8	-9.9	6.7	-9.9	-99	28	27
16:35	12.0	12.3	12.8	13.1	13.2	13.6	9.8	-9.9	7.2	-9.9	-99	27	26
16:45	12.0	12.4	12.9	13.1	13.2	13.7	10.8	-9.9	7.7	-9.9	-99	27	25
16:55	12.1	12.4	12.9	13.2	13.3	13.7	10.8	-9.9	7.7	-9.9	-99	27	26
17:05	12.2	12.5	13.0	13.2	13.3	13.7	10.8	-9.9	7.7	-9.9	-99	27	25
17:15	12.2	12.6	13.0	13.3	13.5	13.8	10.8	-9.9	7.7	-9.9	-99	27	27
17:25	12.3	12.7	13.1	13.4	13.5	13.9	10.8	-9.9	7.2	-9.9	-99	27	26
17:35	12.4	12.7	13.1	13.4	13.6	13.8	10.8	-9.9	7.2	-9.9	-99	27	26
17:45	12.3	12.7	13.1	13.3	13.5	13.8	10.8	-9.9	7.2	-9.9	-99	28	27

17:55	12.5	12.9	13.3	13.6	13.7	13.6	11.3	-9.9	8.2	-9.9	-99	28	27
18:05	12.5	12.9	13.2	13.5	13.6	13.5	11.3	-9.9	8.7	-9.9	-99	28	26
18:15	12.4	12.7	13.1	13.4	13.6	13.4	11.8	-9.9	8.7	-9.9	-99	28	26
18:25	12.4	12.8	13.1	13.4	13.5	13.5	11.3	-9.9	8.2	-9.9	-99	28	27
18:35	12.4	12.7	13.0	13.3	13.5	13.4	11.3	-9.9	7.7	-9.9	-99	28	28
18:45	12.3	12.6	13.0	13.2	13.4	13.4	10.8	-9.9	7.2	-9.9	-99	27	25
18:55	12.2	12.5	12.9	13.1	13.2	13.1	9.8	-9.9	6.7	-9.9	-99	28	26
19:05	12.2	12.5	12.7	13.0	13.1	13.2	9.8	-9.9	6.2	-9.9	-99	27	26
19:15	12.1	12.3	12.6	12.7	12.9	13.0	10.3	-9.9	6.2	-9.9	-99	27	25
19:25	12.0	12.2	12.4	12.6	12.7	12.9	10.8	-9.9	6.2	-9.9	-99	27	25
19:35	12.1	12.3	12.4	12.5	12.6	12.7	11.3	-9.9	6.7	-9.9	-99	27	25
19:45	12.0	12.2	12.3	12.4	12.5	12.6	11.8	-9.9	6.7	-9.9	-99	27	25
19:55	11.9	12.1	12.3	12.4	12.4	12.5	11.8	-9.9	6.7	-9.9	-99	27	26
20:05	11.8	12.0	12.2	12.4	12.5	12.5	12.4	-9.9	7.2	-9.9	-99	27	26
20:15	11.7	12.0	12.2	12.4	12.6	12.7	12.4	-9.9	7.7	-9.9	-99	27	25
20:25	11.6	11.9	12.1	12.3	12.4	12.5	11.8	-9.9	6.7	-9.9	-99	27	25
20:35	11.4	11.7	12.0	12.2	12.3	12.4	11.8	-9.9	7.2	-9.9	-99	27	25
20:45	11.4	11.7	11.9	12.1	12.2	12.3	11.8	-9.9	7.2	-9.9	-99	27	26
20:55	11.5	11.7	11.9	12.0	12.1	12.2	12.4	-9.9	7.2	-9.9	-99	27	25
21:05	11.6	11.8	12.0	12.1	12.1	12.2	12.9	-9.9	7.2	-9.9	-99	27	25
21:15	11.5	11.8	12.0	12.1	12.3	12.4	12.9	-9.9	7.7	-9.9	-99	27	26
21:25	11.6	11.8	12.1	12.3	12.5	12.5	12.9	-9.9	7.7	-9.9	-99	27	27
21:35	11.5	11.8	12.1	12.3	12.5	12.7	12.9	-9.9	8.2	-9.9	-99	27	25
21:45	11.5	11.8	12.1	12.2	12.4	12.6	12.4	-9.9	7.7	-9.9	-99	27	25
21:55	11.4	11.7	12.0	12.2	12.4	12.7	11.8	-9.9	7.7	-9.9	-99	27	24
22:05	11.4	11.8	12.0	12.3	12.4	12.7	11.8	-9.9	7.2	-9.9	-99	27	25
22:15	11.4	11.7	12.1	12.3	12.5	12.7	11.8	-9.9	7.2	-9.9	-99	27	26
22:25	11.3	11.6	11.9	12.1	12.4	12.7	11.3	-9.9	6.7	-9.9	-99	26	25
22:35	11.3	11.6	11.9	12.1	12.3	12.5	11.3	-9.9	6.7	-9.9	-99	27	25
22:45	11.3	11.5	11.8	12.1	12.3	12.5	11.3	-9.9	6.7	-9.9	-99	27	25
22:55	11.2	11.5	11.8	12.0	12.2	12.5	10.8	-9.9	6.7	-9.9	-99	27	26
23:05	11.3	11.6	11.9	12.1	12.3	12.5	10.8	-9.9	6.2	-9.9	-99	27	26
23:15	11.2	11.5	11.9	12.1	12.3	12.6	10.3	-9.9	6.7	-9.9	-99	27	25
23:25	11.1	11.4	11.8	12.0	12.2	12.6	10.3	-9.9	6.7	-9.9	-99	28	25
23:35	11.1	11.4	11.8	12.0	12.2	12.6	9.8	-9.9	6.7	-9.9	-99	27	26
23:45	11.0	11.4	11.7	12.0	12.2	12.5	10.3	-9.9	6.7	-9.9	-99	28	24
23:55	11.1	11.4	11.8	12.0	12.2	12.4	10.3	-9.9	6.7	-9.9	-99	28	27

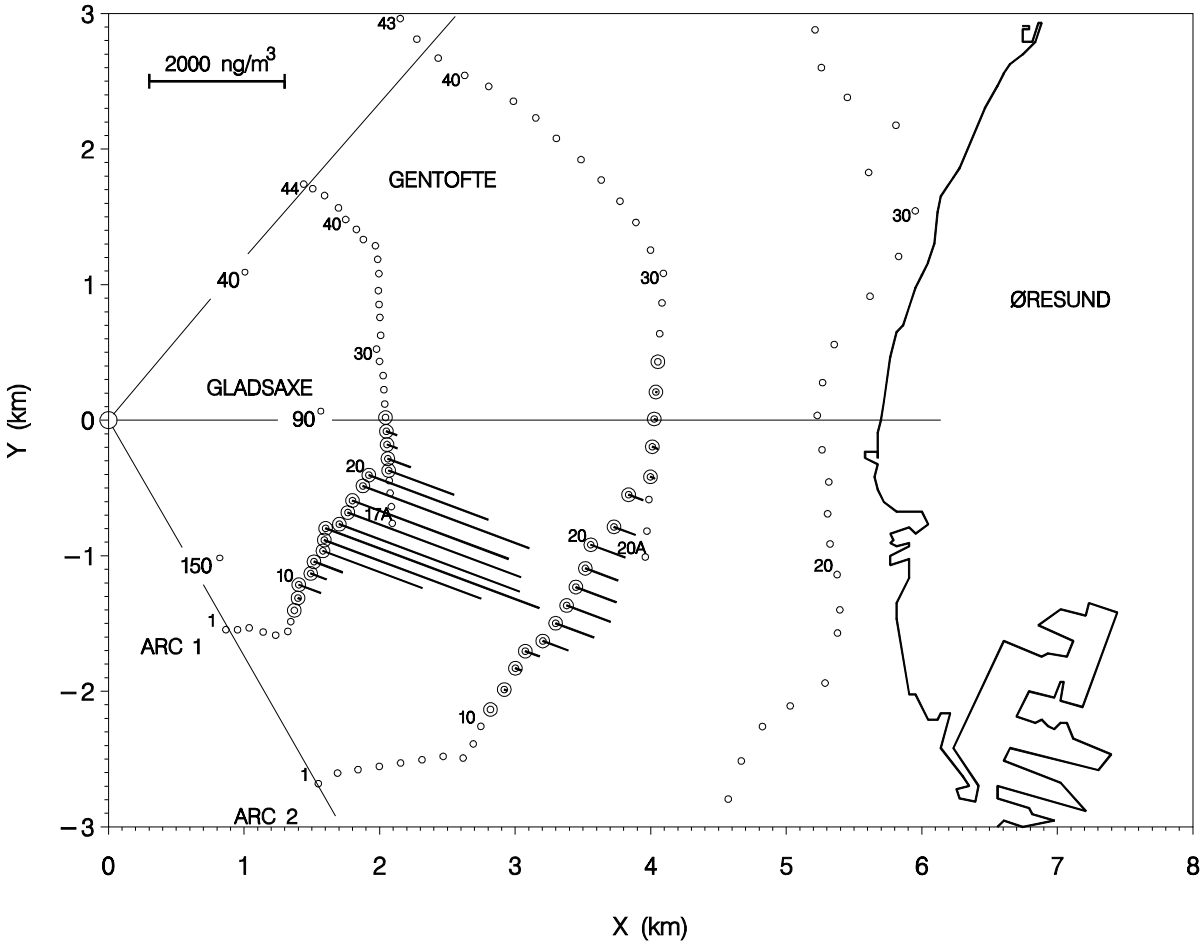

Figure 3. Experiment on September 20, 1978. The bars indicate the mean measured tracer concentrations for the period 13:17-14:17 (run 1-3, Table 8-9), for the individual measuring positions.

Table 8. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on September 20, 1978, Arc 1

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
8	0	0	0	0	
					95
9	0	129	0	43	
					93
10	0	1028	0	343	
					110
11	14	584	133	244	
					90
12	394	631	312	446	
					99
13	1873	2473	340	1562	
					78
14	2186	4390	817	2464	
					84
15	2204	5268	2607	3360	
					66
16	2392	3942	2177	2837	
					103
17	2670	-	-	2721	
					94
18	2428	2168	2769	2455	
					129
19	3010	2464	2374	2616	
					91
20	1532	1819	2276	1876	
					86
21	688	878	1505	1024	
					79
22	97	462	511	357	
					94
23	36	258	179	158	
					89
24	0	25	469	165	
					93
25	0	0	0	0	
sampling period	13:17 13:37	13:37 13:57	13:57 14:17	13:17 14:17	

Direction of the plume centreline: 292 degrees
Plume centre position (x,y) = (1753, -698)

Table 9. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on September 20, 1978, Arc 2

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
11	0	0	0	0	
					172
12	33	18	69	40	
					175
13	33	171	65	90	
					143
14	105	461	-	220	
					113
15	526	552	116	398	
					155
16	914	591	298	601	
					150
17	922	533	602	686	
					151
18	566	504	831	634	
					153
19	200	595	744	513	
					178
20	185	777	653	538	
					181
21	25	363	620	336	
					259
22	0	15	664	226	
					177
23	0	0	207	69	
					214
24	0	0	254	85	
					198
25	0	0	-	50	
					192
26	0	0	51	17	
					216
27	0	0	0	0	
sampling period	13:17-13:37	13:37-13:57	13:57-14:17	13:17-14:17	

Direction of the plume centreline: 289 degrees
Plume centre position (x,y) = (3466, -1197)

Table 10. Meteorological measurements along the tower at the point of release. Time indications are in GMT+1.

Experiment on September 20, 1978

Time	Temperature (deg Celcius) height						Wind-speed (m/s) height				Wind-direction (deg/10) height		
	200 (m)	160 (m)	120 (m)	80 (m)	40 (m)	2 (m)	200 (m)	120 (m)	60 (m)	10 (m)	200 (m)	120 (m)	10 (m)
0:05	9.7	9.9	9.8	9.5	9.2	8.5	8.7	6.2	-9.9	1.0	-99	32	29
0:15	9.7	9.9	10.0	9.6	9.1	8.5	8.7	6.7	-9.9	1.5	-99	32	29
0:25	9.9	9.9	9.7	9.7	9.0	8.4	9.3	7.2	-9.9	1.0	-99	33	29
0:35	9.6	9.8	9.5	9.5	9.0	8.7	9.3	6.7	-9.9	1.0	-99	33	32
0:45	9.4	9.6	9.7	9.6	9.4	8.8	8.2	6.2	-9.9	1.0	-99	34	32
0:55	9.6	9.9	10.1	10.0	9.6	9.1	7.2	6.2	-9.9	0.5	-99	36	32
1:05	9.5	9.9	10.1	10.2	10.1	9.1	6.7	5.7	-9.9	1.0	-99	10	31
1:15	9.4	9.7	10.0	10.1	9.8	9.1	7.2	6.2	-9.9	0.5	-99	20	34
1:25	9.3	9.5	9.8	9.9	9.7	9.2	7.2	6.2	-9.9	1.0	-99	20	35
1:35	9.1	9.4	9.7	9.8	9.6	9.1	7.2	6.2	-9.9	1.0	-99	20	35
1:45	9.1	9.3	9.6	9.9	9.8	8.4	7.2	5.7	-9.9	1.0	-99	20	35
1:55	9.0	9.2	9.3	9.5	9.5	8.5	7.2	5.1	-9.9	0.5	-99	20	33
2:05	9.0	9.3	9.3	9.4	9.4	8.1	7.2	5.1	-9.9	0.5	-99	20	33
2:15	8.9	9.3	9.5	9.4	9.3	8.4	6.7	5.1	-9.9	0.5	-99	20	33
2:25	8.8	9.1	9.2	9.3	9.4	8.0	6.2	4.6	-9.9	0.5	-99	10	33
2:35	8.7	9.0	9.3	9.4	9.2	8.2	5.7	4.1	-9.9	0.5	-99	10	31
2:45	8.5	8.9	9.2	9.4	9.3	8.1	5.1	4.1	-9.9	0.5	-99	10	30
2:55	8.5	8.8	9.0	9.3	9.4	8.1	4.6	3.6	-9.9	1.0	-99	34	27
3:05	8.3	8.5	8.8	9.1	9.2	7.7	4.6	2.6	-9.9	1.0	-99	32	28
3:15	8.3	8.7	9.0	9.3	9.0	7.2	4.6	3.1	-9.9	1.0	-99	33	29
3:25	8.5	8.6	8.8	8.7	8.3	7.3	5.1	4.1	-9.9	1.0	-99	34	31
3:35	8.5	8.7	8.9	9.0	8.3	7.5	6.7	5.1	-9.9	1.0	-99	35	30
3:45	8.3	8.6	8.9	9.0	8.6	7.6	7.2	5.7	-9.9	0.5	-99	36	34
3:55	8.0	8.3	8.6	8.9	8.9	7.0	7.2	5.7	-9.9	0.5	-99	10	35
4:05	8.0	8.1	8.3	8.6	8.6	7.3	7.2	5.7	-9.9	1.0	-99	20	35
4:15	8.1	8.3	8.4	8.6	8.6	6.7	7.2	6.2	-9.9	1.0	-99	20	36
4:25	7.9	8.2	8.4	8.6	8.4	6.8	6.7	5.7	-9.9	1.0	-99	20	36
4:35	8.0	8.3	8.4	8.6	8.1	6.3	6.2	5.7	-9.9	1.5	-99	20	35
4:45	8.0	8.3	8.6	8.6	8.6	6.1	6.2	5.1	-9.9	1.0	-99	36	35
4:55	8.0	8.2	8.5	8.6	8.6	6.3	6.2	5.1	-9.9	0.5	-99	36	10
5:05	7.8	8.1	8.4	8.7	8.6	5.7	6.2	5.1	-9.9	0.5	-99	36	36
5:15	7.6	8.0	8.3	8.6	8.7	5.9	6.2	4.6	-9.9	0.5	-99	10	33
5:25	7.7	7.9	8.2	8.5	8.6	5.7	5.7	4.1	-9.9	0.5	-99	10	35
5:35	7.7	7.9	8.1	8.4	8.5	5.8	5.7	4.1	-9.9	0.0	-99	10	35
5:45	7.5	7.9	8.1	8.3	8.4	5.8	5.7	4.1	-9.9	0.5	-99	10	10
5:55	7.5	7.8	8.0	8.2	8.3	5.8	5.7	4.1	-9.9	0.0	-99	10	35
6:05	7.4	7.6	7.9	8.2	8.2	6.0	5.1	4.1	-9.9	0.0	-99	10	33
6:15	7.3	7.5	7.7	8.1	8.1	6.1	5.1	3.6	-9.9	0.5	-99	10	30
6:25	7.6	7.8	8.0	8.1	8.2	6.0	5.1	3.6	-9.9	0.5	-99	30	31
6:35	7.5	7.8	8.0	8.1	8.0	6.4	5.1	3.6	-9.9	0.5	-99	30	30
6:45	7.5	7.8	8.1	8.1	8.0	6.9	4.1	4.1	-9.9	1.0	-99	30	30
6:55	7.4	7.7	8.0	7.9	7.9	7.0	4.1	4.6	-9.9	0.5	-99	30	31
7:05	7.3	7.6	8.0	8.2	7.8	7.5	4.1	4.1	-9.9	0.5	-99	30	30
7:15	7.2	7.5	7.8	7.9	7.4	7.3	4.1	4.1	-9.9	1.0	-99	30	28
7:25	7.3	7.6	8.0	7.9	7.3	7.5	3.6	3.1	-9.9	1.0	-99	30	27
7:35	7.3	7.5	7.9	7.7	7.3	7.6	3.1	2.6	-9.9	1.0	-99	30	27
7:45	7.4	7.5	7.9	7.7	7.5	8.2	2.6	2.6	-9.9	1.0	-99	20	28

7:55	7.4	7.6	7.3	7.6	7.7	8.6	2.6	2.1	-9.9	1.0	-99	33	27
8:05	7.1	7.4	7.7	7.8	7.9	8.9	2.6	2.1	-9.9	1.5	-99	32	28
8:15	7.0	7.3	7.6	8.0	8.2	9.5	2.6	2.1	-9.9	1.0	-99	33	28
8:25	7.0	7.3	7.8	8.2	8.4	9.7	2.6	2.1	-9.9	1.0	-99	29	31
8:35	7.1	7.4	7.8	8.2	8.5	10.1	3.6	2.1	-9.9	1.0	-99	32	29
8:45	7.2	7.6	8.0	8.5	8.8	10.7	3.6	2.6	-9.9	1.5	-99	31	29
8:55	7.4	7.9	8.3	8.6	8.9	10.7	3.6	3.1	-9.9	1.5	-99	31	29
9:05	7.6	8.0	8.4	8.9	9.4	11.2	3.1	3.1	-9.9	1.5	-99	31	28
9:15	7.9	8.3	8.6	9.0	9.3	11.3	4.1	4.1	-9.9	2.1	-99	33	31
9:25	7.8	8.2	8.6	9.1	9.6	12.0	4.6	4.6	-9.9	2.1	-99	32	31
9:35	8.0	8.4	8.8	9.3	9.8	11.8	5.7	5.1	-9.9	2.1	-99	33	33
9:45	8.3	8.7	9.0	9.4	9.7	11.9	5.1	4.6	-9.9	2.1	-99	33	32
9:55	8.1	8.5	8.9	9.3	9.6	12.0	4.6	4.6	-9.9	2.1	-99	34	32
10:05	8.3	8.7	9.1	9.6	9.9	12.1	5.1	4.6	-9.9	2.1	-99	33	31
10:15	8.5	8.9	9.3	9.8	10.1	12.4	4.6	4.1	-9.9	2.1	-99	33	33
10:25	8.6	9.0	9.4	9.9	10.3	12.3	4.6	4.6	-9.9	1.5	-99	33	30
10:35	8.7	9.0	9.5	10.0	10.8	12.5	3.6	3.6	-9.9	1.5	-99	34	36
10:45	8.8	9.3	9.7	10.2	10.6	12.5	4.1	3.6	-9.9	2.1	-99	33	31
10:55	9.1	9.5	9.9	10.5	10.9	12.5	3.6	3.1	-9.9	1.5	-99	31	34
11:05	9.0	9.3	9.7	10.1	10.5	12.5	3.6	3.6	-9.9	2.1	-99	30	28
11:15	9.1	9.5	10.0	10.5	10.9	12.9	3.6	3.6	-9.9	2.1	-99	33	33
11:25	9.2	9.6	10.0	10.5	11.1	13.6	4.1	4.1	-9.9	1.5	-99	30	27
11:35	9.3	9.7	10.2	10.6	10.9	13.1	4.1	4.1	-9.9	2.1	-99	31	32
11:45	9.2	9.6	10.0	10.6	11.1	13.2	4.6	4.6	-9.9	2.6	-99	30	29
11:55	9.2	9.6	10.0	10.5	10.9	13.0	5.1	4.6	-9.9	2.6	-99	31	31
12:05	9.4	9.7	10.2	10.6	11.3	12.8	5.1	4.6	-9.9	2.1	-99	29	21
12:15	9.2	9.7	10.1	10.5	10.9	12.5	4.6	4.6	-9.9	2.1	-99	31	29
12:25	9.4	9.7	10.1	10.6	11.1	12.1	4.6	4.6	-9.9	2.6	-99	30	28
12:35	9.2	9.6	10.1	10.6	10.9	12.4	4.1	4.1	-9.9	2.6	-99	31	28
12:45	9.4	9.8	10.1	10.5	11.1	12.3	4.1	4.1	-9.9	2.1	-99	29	28
12:55	9.5	9.9	10.2	10.6	11.0	12.1	4.6	4.1	-9.9	2.1	-99	30	27
13:05	9.3	9.7	10.1	10.7	11.1	12.5	4.6	4.6	-9.9	2.6	-99	30	29
13:15	9.3	9.7	10.1	10.6	10.9	12.5	4.6	4.6	-9.9	2.6	-99	31	30
13:25	9.6	10.0	10.4	10.8	11.0	12.0	4.6	4.1	-9.9	2.6	-99	29	25
13:35	9.5	9.8	10.1	10.7	11.0	12.7	4.1	4.1	-9.9	2.1	-99	31	30
13:45	9.5	9.9	10.3	10.8	11.1	12.4	4.1	4.1	-9.9	2.1	-99	29	28
13:55	9.5	9.9	10.3	10.8	11.0	12.4	4.1	4.1	-9.9	2.1	-99	30	29
14:05	9.5	9.9	10.3	10.6	11.0	12.2	4.1	3.6	-9.9	2.1	-99	30	32
14:15	9.6	9.9	10.3	10.8	11.2	12.2	3.6	3.6	-9.9	2.1	-99	29	28
14:25	9.5	9.9	10.4	10.8	11.1	12.2	3.6	3.6	-9.9	2.1	-99	30	30
14:35	9.5	9.8	10.2	10.7	11.0	12.3	4.1	4.1	-9.9	2.1	-99	31	31
14:45	9.4	9.8	10.2	10.6	10.9	12.2	4.6	4.6	-9.9	2.1	-99	31	30
14:55	9.3	9.7	10.1	10.5	10.8	11.7	5.1	4.6	-9.9	2.1	-99	31	28
15:05	9.2	9.6	10.0	10.5	10.8	11.6	5.7	5.1	-9.9	2.1	-99	30	30
15:15	8.9	9.3	9.8	10.2	10.5	11.4	6.7	6.2	-9.9	2.6	-99	30	28
15:25	8.8	9.2	9.6	10.0	10.4	11.1	7.2	6.7	-9.9	3.1	-99	30	28
15:35	8.9	9.3	9.7	10.1	10.5	11.2	7.2	6.7	-9.9	2.6	-99	30	28
15:45	8.8	9.2	9.6	10.0	10.3	11.2	8.2	7.2	-9.9	3.1	-99	30	29
15:55	8.9	9.3	9.8	10.2	10.5	11.3	7.7	6.7	-9.9	3.1	-99	29	30
16:05	8.9	9.3	9.7	10.1	10.4	11.5	7.2	6.2	-9.9	3.1	-99	30	29
16:15	8.9	9.3	9.7	10.1	10.6	11.2	7.2	6.2	-9.9	3.1	-99	29	27
16:25	9.0	9.4	9.7	10.1	10.4	11.2	7.2	6.7	-9.9	3.1	-99	29	29
16:35	9.1	9.5	9.8	10.2	10.6	11.1	7.7	6.7	-9.9	3.1	-99	28	29
16:45	9.0	9.4	9.8	10.2	10.5	11.1	8.2	6.7	-9.9	3.1	-99	30	29
16:55	9.0	9.3	9.7	10.1	10.4	11.0	8.7	7.2	-9.9	2.6	-99	30	29
17:05	8.9	9.3	9.7	10.1	10.4	10.9	8.7	7.2	-9.9	3.6	-99	31	29
17:15	8.9	9.3	9.6	10.0	10.3	11.0	9.3	7.7	-9.9	3.1	-99	30	30
17:25	8.9	9.3	9.7	10.0	10.3	10.7	9.3	7.7	-9.9	3.1	-99	30	29
17:35	8.9	9.3	9.6	10.0	10.2	10.7	10.3	8.7	-9.9	3.6	-99	30	29

17:45	8.8	9.2	9.6	9.9	10.2	10.6	10.3	9.3	-9.9	3.6	-99	30	29
17:55	8.8	9.1	9.5	9.8	10.1	10.6	10.3	8.7	-9.9	3.6	-99	30	28
18:05	8.7	9.1	9.4	9.7	10.0	10.4	10.3	8.7	-9.9	3.6	-99	30	29
18:15	8.7	9.0	9.3	9.7	9.9	10.4	10.3	8.2	-9.9	3.6	-99	31	29
18:25	8.7	9.0	9.3	9.6	9.9	10.3	9.8	7.7	-9.9	3.1	-99	30	29
18:35	8.6	9.0	9.3	9.6	9.8	10.3	9.3	7.7	-9.9	2.6	-99	30	30
18:45	8.5	8.9	9.2	9.5	9.7	10.2	9.3	7.7	-9.9	2.6	-99	31	30
18:55	8.3	8.7	9.0	9.3	9.6	10.1	10.8	8.2	-9.9	3.1	-99	31	30
19:05	8.2	8.5	8.9	9.1	9.4	9.8	10.8	8.7	-9.9	2.6	-99	32	30
19:15	8.2	8.5	8.8	9.0	9.3	9.8	10.3	8.7	-9.9	3.1	-99	31	31
19:25	8.2	8.5	8.8	9.0	9.2	9.7	10.3	8.2	-9.9	2.6	-99	31	29
19:35	8.1	8.4	8.7	8.9	9.2	9.6	9.8	7.7	-9.9	2.6	-99	30	30
19:45	8.0	8.3	8.7	9.0	9.2	9.7	10.8	8.2	-9.9	3.1	-99	30	28
19:55	7.9	8.2	8.6	8.8	9.1	9.5	10.8	9.3	-9.9	3.1	-99	30	28
20:05	7.8	8.1	8.5	8.8	9.1	9.5	10.8	9.3	-9.9	3.1	-99	30	29
20:15	7.7	8.1	8.5	8.8	9.1	9.5	10.8	8.7	-9.9	3.1	-99	30	28
20:25	7.6	7.9	8.4	8.7	8.9	9.4	10.8	8.7	-9.9	3.1	-99	29	28
20:35	7.5	7.9	8.2	8.6	8.8	9.4	10.3	8.7	-9.9	3.6	-99	29	29
20:45	7.4	7.8	8.2	8.5	8.7	9.3	10.3	8.2	-9.9	3.1	-99	29	28
20:55	7.4	7.8	8.2	8.4	8.7	9.0	9.8	8.7	-9.9	3.1	-99	29	28
21:05	7.4	7.8	8.2	8.4	8.7	9.1	9.8	8.2	-9.9	3.1	-99	29	29
21:15	7.4	7.7	8.1	8.4	8.7	9.1	9.3	7.7	-9.9	2.6	-99	29	27
21:25	7.2	7.6	8.0	8.3	8.6	9.0	8.7	7.2	-9.9	2.6	-99	29	28
21:35	7.2	7.5	8.0	8.2	8.5	8.9	8.7	7.2	-9.9	2.6	-99	28	27
21:45	7.3	7.5	7.9	8.1	8.4	8.8	8.7	6.7	-9.9	2.6	-99	28	27
21:55	7.4	7.5	7.9	8.1	8.4	8.7	8.2	6.2	-9.9	2.6	-99	28	26
22:05	7.2	7.5	7.9	8.1	8.4	8.7	8.2	6.2	-9.9	2.6	-99	28	24
22:15	7.1	7.4	7.8	8.0	8.2	8.6	8.2	6.7	-9.9	2.6	-99	27	25
22:25	7.2	7.5	7.9	8.1	8.3	8.7	8.7	6.7	-9.9	2.6	-99	27	25
22:35	7.1	7.3	7.7	7.9	8.1	8.6	8.2	6.2	-9.9	2.6	-99	27	25
22:45	7.0	7.2	7.6	7.8	8.1	8.5	8.2	6.7	-9.9	3.1	-99	27	26
22:55	7.0	7.2	7.6	7.7	8.0	8.5	8.7	7.2	-9.9	3.1	-99	26	25
23:05	7.4	7.2	7.5	7.7	7.9	8.4	8.2	6.7	-9.9	2.6	-99	26	25
23:15	7.3	7.1	7.5	7.6	7.9	8.4	8.2	6.7	-9.9	2.6	-99	26	24
23:25	7.1	7.1	7.4	7.6	7.9	8.3	8.2	6.7	-9.9	3.1	-99	26	24
23:35	6.8	7.0	7.4	7.6	7.8	8.3	7.7	6.7	-9.9	2.6	-99	25	23
23:45	7.2	7.2	7.5	7.6	7.8	8.3	8.2	6.7	-9.9	3.1	-99	25	23
23:55	7.0	7.2	7.6	7.7	7.9	8.3	8.2	6.7	-9.9	3.1	-99	24	24

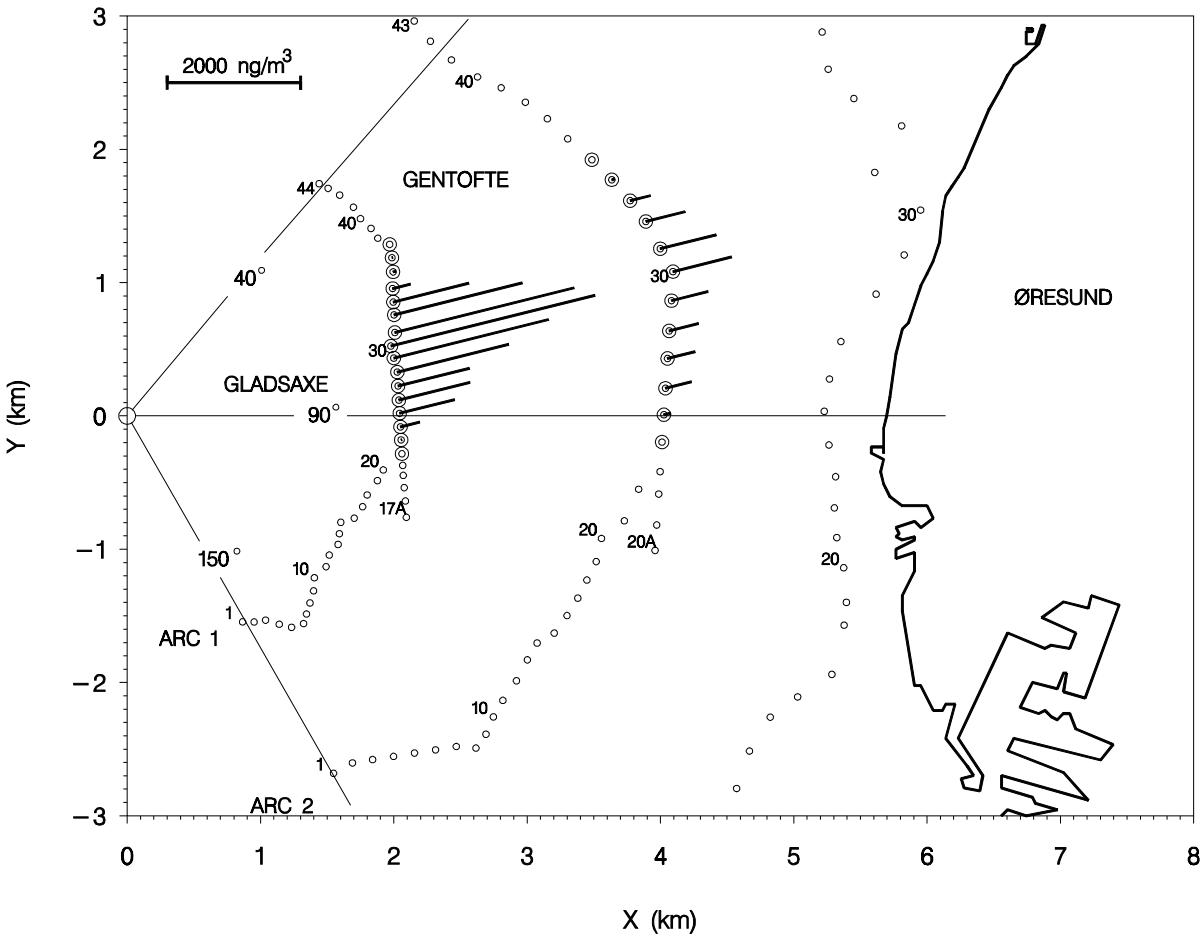

Figure 4. Experiment on September 26, 1978. The bars indicate the mean measured tracer concentrations for the period 11:40-12:40 (run 1-3, Table 11-12), for the individual measuring positions.

Table 11. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on September 26, 1978; Arc 1

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
22	0	0	0	0	
					103
23	29	0	0	10	
					97
24	883	0	0	294	
					101
25	2459	11	64	845	
					98
26	2539	21	726	1096	
					105
27	1833	72	1395	1100	
					103
28	2092	408	2656	1719	
					108
29	2289	1556	3326	2390	
					93
30	1284	3487	4685	3152	
					92
31	358	4374	3577	2769	
					130
32	0	3262	2682	1981	
					95
33	0	2084	1413	1165	
					100
34	0	465	354	273	
					121
35	0	54	57	37	
					105
36	32	0	0	11	
					101
37	0	0	0	0	
sampling period	11:40-12:00	12:00-12:20	12:20-12:40	11:40-12:40	

Direction of the plume centreline: 256 degrees
Plume centre position (x,y) = (1989, 479)

Table 12. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on September 26, 1978; Arc 2

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
24	0	0	0	0	
					196
25	202	108	0	103	
					190
26	910	231	58	399	
					213
27	957	256	61	425	
					198
28	686	199	466	450	
					216
29	473	209	1003	562	
					209
30	563	679	1471	904	
					190
31	365	754	1471	863	
					224
32	97	480	1234	604	
					180
33	0	152	780	310	
					185
34	0	25	105	43	
					181
35	0	0	0	0	
sampling period	11:40-12:00	12:00-12:20	12:20-12:40	11:40 12:40	

Direction of the plume centreline: 256 degrees
Plume centre position (x,y) = (4090, 1000)

Table 13. Meteorological measurements along the tower at the point of release. Time indications are in GMT+1.

Experiment on September 26, 1978

Time	Temperature (deg Celcius) height						Wind-speed (m/s) height				Wind-direction (deg/10) height		
	200 (m)	160 (m)	120 (m)	80 (m)	40 (m)	2 (m)	200 (m)	120 (m)	60 (m)	10 (m)	200 (m)	120 (m)	10 (m)
0:05	9.9	10.2	10.4	10.7	10.8	10.7	12.9	9.8	-9.9	3.6	29	28	28
0:15	9.9	10.1	10.5	10.6	10.7	10.9	12.4	9.8	-9.9	3.6	29	28	26
0:25	9.9	10.2	10.4	10.7	10.9	10.9	12.4	9.3	-9.9	4.1	29	28	26
0:35	9.9	10.2	10.5	10.7	10.9	10.9	12.4	9.8	-9.9	3.6	29	29	27
0:45	9.9	10.2	10.4	10.6	10.9	10.9	12.9	10.3	-9.9	3.6	30	29	28
0:55	9.8	10.1	10.3	10.6	10.7	10.7	12.9	10.3	-9.9	3.6	30	29	28
1:05	9.9	10.1	10.3	10.5	10.7	10.5	12.9	9.8	-9.9	3.6	30	29	28
1:15	9.9	10.1	10.3	10.5	10.7	10.6	12.9	9.8	-9.9	3.6	30	29	27
1:25	9.7	9.9	10.2	10.4	10.6	10.6	12.4	9.8	-9.9	3.6	29	28	27
1:35	9.6	9.9	10.1	10.4	10.5	10.4	11.8	9.3	-9.9	3.6	29	29	27
1:45	9.6	9.9	10.1	10.3	10.4	10.3	11.8	9.3	-9.9	3.6	29	29	27
1:55	9.6	9.8	9.9	10.2	10.3	10.2	11.8	8.7	-9.9	3.1	29	29	28
2:05	9.6	9.8	10.0	10.2	10.2	10.2	12.4	8.7	-9.9	3.1	29	28	27
2:15	9.5	9.7	9.9	10.1	10.1	10.1	11.8	9.3	-9.9	3.1	29	28	26
2:25	9.3	9.5	9.6	9.8	9.9	9.9	11.3	8.2	-9.9	3.1	29	27	25
2:35	9.3	9.4	9.5	9.7	9.6	9.7	10.8	7.7	-9.9	2.6	28	27	25
2:45	9.4	9.4	9.5	9.6	9.5	9.5	11.3	8.2	-9.9	2.6	28	27	24
2:55	9.3	9.4	9.4	9.4	9.4	9.4	11.3	8.2	-9.9	2.6	28	26	25
3:05	9.3	9.4	9.4	9.4	9.2	9.3	11.8	8.7	-9.9	3.1	28	26	24
3:15	9.3	9.3	9.2	9.3	9.2	9.4	11.8	8.7	-9.9	3.6	27	26	24
3:25	9.5	9.5	9.3	9.2	9.1	9.3	12.4	9.3	-9.9	3.6	28	26	25
3:35	9.8	9.5	9.3	9.3	9.1	9.3	13.4	9.8	-9.9	3.1	28	26	23
3:45	9.6	9.6	9.5	9.5	9.4	9.4	13.4	10.3	-9.9	3.1	28	26	25
3:55	9.8	9.6	9.5	9.6	9.6	9.6	13.9	10.3	-9.9	4.1	28	27	25
4:05	10.1	9.8	9.6	9.8	9.8	9.8	13.9	10.3	-9.9	4.1	28	27	26
4:15	9.6	9.6	9.6	9.7	9.7	9.8	13.4	9.8	-9.9	3.6	28	27	25
4:25	9.6	9.6	9.6	9.6	9.6	9.7	12.9	9.3	-9.9	3.1	28	27	25
4:35	9.8	9.7	9.6	9.6	9.5	9.6	12.9	9.3	-9.9	3.1	28	27	25
4:45	9.9	9.6	9.4	9.4	9.4	9.4	12.9	9.3	-9.9	3.1	28	27	25
4:55	9.6	9.6	9.5	9.4	9.4	9.5	12.9	9.3	-9.9	2.6	28	26	25
5:05	9.5	9.3	9.3	9.3	9.4	9.5	12.9	9.3	-9.9	3.1	27	26	25
5:15	9.4	9.2	9.2	9.3	9.3	9.5	12.9	8.7	-9.9	2.6	27	26	23
5:25	9.5	9.4	9.5	9.6	9.5	9.6	12.9	9.3	-9.9	2.6	27	26	25
5:35	9.3	9.3	9.5	9.5	9.4	9.6	12.9	9.3	-9.9	3.1	27	26	24
5:45	9.5	9.5	9.4	9.4	9.3	9.6	12.9	8.7	-9.9	3.1	27	26	23
5:55	9.3	9.4	9.4	9.4	9.4	9.6	12.9	8.7	-9.9	3.1	27	26	25
6:05	9.5	9.4	9.4	9.4	9.4	9.6	12.4	8.7	-9.9	3.1	27	26	25
6:15	9.3	9.3	9.4	9.5	9.5	9.6	12.4	8.7	-9.9	3.1	28	26	24
6:25	9.5	9.6	9.5	9.4	9.4	9.6	12.4	8.7	-9.9	2.6	27	26	26
6:35	9.7	9.6	9.5	9.5	9.4	9.6	12.4	8.7	-9.9	3.1	28	26	25
6:45	9.6	9.6	9.7	9.6	9.4	9.7	12.4	8.7	-9.9	3.1	27	26	24
6:55	9.6	9.6	9.6	9.6	9.5	9.9	12.4	9.3	-9.9	3.1	27	26	24
7:05	9.6	9.7	9.7	9.8	9.7	10.1	11.8	8.7	-9.9	3.1	27	26	24
7:15	9.5	9.6	9.7	9.8	9.9	10.3	11.8	8.7	-9.9	3.1	27	26	24
7:25	9.8	9.8	9.9	10.1	10.2	10.7	11.8	8.7	-9.9	3.1	28	26	24
7:35	9.8	9.9	10.1	10.4	10.5	11.0	11.8	8.7	-9.9	3.1	27	26	25
7:45	9.5	9.8	10.1	10.5	10.8	11.3	-9.9	-9.9	-9.9	-9.9	27	26	24

7:55	9.8	10.1	10.4	10.8	11.0	11.6	11.3	8.2	-9.9	4.1	27	26	25
8:05	10.0	10.2	10.6	11.0	11.3	12.2	10.8	8.7	-9.9	3.1	27	26	26
8:15	10.4	10.4	10.8	11.2	11.5	12.3	10.8	8.7	-9.9	3.1	27	27	25
8:25	10.3	10.6	11.1	11.5	11.8	12.5	10.8	8.7	-9.9	4.1	27	26	26
8:35	10.5	10.8	11.3	11.7	12.0	12.8	10.8	8.7	-9.9	4.6	27	26	24
8:45	10.6	11.0	11.4	11.9	12.3	13.3	10.3	8.7	-9.9	4.6	26	26	25
8:55	10.8	11.2	11.6	12.0	12.3	13.5	10.3	8.7	-9.9	4.6	27	26	25
9:05	11.0	11.4	11.8	12.2	12.7	13.6	10.3	8.7	-9.9	4.6	27	27	26
9:15	11.1	11.4	11.8	12.3	12.7	13.9	10.3	9.3	-9.9	4.6	28	27	26
9:25	11.1	11.6	12.0	12.4	12.8	13.9	10.8	9.3	-9.9	4.6	28	27	25
9:35	11.2	11.6	12.0	12.4	12.8	13.7	10.8	9.8	-9.9	5.1	28	27	26
9:45	11.3	11.7	12.2	12.6	13.1	14.4	10.8	9.8	-9.9	4.6	27	27	26
9:55	11.5	11.9	12.3	12.7	13.1	14.2	10.8	9.8	-9.9	4.6	28	27	25
10:05	11.6	12.0	12.5	12.9	13.2	14.6	10.8	9.3	-9.9	4.6	27	27	26
10:15	12.0	12.4	12.8	13.3	13.8	15.0	10.3	9.8	-9.9	4.6	27	26	24
10:25	11.9	12.2	12.7	13.2	13.7	15.0	10.3	10.3	-9.9	5.7	27	28	26
10:35	11.9	12.3	12.7	13.2	13.6	15.1	10.3	9.3	-9.9	4.6	28	27	24
10:45	12.1	12.5	12.9	13.4	13.9	15.4	10.8	9.8	-9.9	5.1	26	26	25
10:55	12.2	12.5	13.0	13.4	13.8	15.0	11.3	10.3	-9.9	5.1	27	27	27
11:05	12.4	12.8	13.2	13.7	14.1	15.9	11.8	10.8	-9.9	5.1	28	27	25
11:15	12.4	12.8	13.2	13.7	14.3	15.9	11.3	10.8	-9.9	5.7	27	27	25
11:25	12.4	12.8	13.2	13.7	14.1	15.7	11.8	11.3	-9.9	5.1	27	27	27
11:35	12.5	12.8	13.2	13.7	14.2	15.2	11.8	11.3	-9.9	5.1	27	27	26
11:45	12.5	12.9	13.3	13.9	14.4	16.1	10.8	9.8	-9.9	4.6	28	27	27
11:55	12.7	13.1	13.5	14.0	14.3	15.5	10.3	9.3	-9.9	4.6	27	27	26
12:05	12.7	13.1	13.6	14.0	14.4	15.2	10.3	9.3	-9.9	5.1	27	27	25
12:15	12.6	13.0	13.4	13.8	14.2	14.9	9.8	9.3	-9.9	5.1	26	26	26
12:25	12.6	13.0	13.5	14.1	14.6	15.9	10.3	9.8	-9.9	5.1	27	27	26
12:35	12.8	13.2	13.6	14.1	14.5	15.8	10.8	10.8	-9.9	5.7	27	27	26
12:45	12.8	13.2	13.6	14.1	14.7	15.7	10.3	9.8	-9.9	5.1	27	26	26
12:55	12.8	13.2	13.6	14.0	14.4	15.5	9.3	8.7	-9.9	4.1	27	26	25
13:05	12.9	13.3	13.7	14.2	14.6	15.6	9.8	8.7	-9.9	4.6	27	27	26
13:15	12.9	13.3	13.7	14.1	14.5	15.4	9.3	8.7	-9.9	4.6	27	27	25
13:25	13.0	13.4	13.8	14.2	14.6	15.3	9.3	8.7	-9.9	4.6	26	27	25
13:35	12.8	13.2	13.7	14.1	14.4	14.9	9.3	8.7	-9.9	4.1	26	26	25
13:45	12.9	13.3	13.7	14.1	14.5	15.0	9.3	8.2	-9.9	4.1	27	26	24
13:55	13.1	13.4	13.9	14.3	14.6	15.2	8.7	7.7	-9.9	4.1	26	25	24
14:05	13.0	13.4	13.8	14.2	14.5	15.1	8.7	7.7	-9.9	4.1	27	27	26
14:15	12.6	12.9	13.2	13.6	13.9	14.4	9.8	8.7	-9.9	4.1	27	27	26
14:25	12.7	13.0	13.4	13.7	14.0	14.6	9.8	8.7	-9.9	3.6	26	26	24
14:35	12.7	13.1	13.5	13.9	14.2	14.8	10.3	8.7	-9.9	4.1	27	26	25
14:45	12.6	13.0	13.4	13.8	14.1	14.7	9.8	9.3	-9.9	4.6	27	26	27
14:55	12.5	12.8	13.2	13.7	14.1	14.6	8.7	7.7	-9.9	3.6	26	26	25
15:05	12.3	12.7	13.1	13.5	13.8	14.3	8.7	8.2	-9.9	4.1	27	26	24
15:15	12.2	12.6	13.0	13.4	13.7	14.2	8.2	7.2	-9.9	3.6	26	25	24
15:25	12.2	12.5	12.9	13.3	13.6	14.0	8.2	6.7	-9.9	3.6	26	25	23
15:35	12.2	12.5	12.9	13.2	13.5	14.0	8.2	6.7	-9.9	3.6	26	25	24
15:45	12.2	12.5	12.9	13.3	13.6	14.0	8.2	6.7	-9.9	3.6	25	24	23
15:55	12.1	12.4	12.8	13.2	13.5	13.9	7.7	6.2	-9.9	3.1	25	24	23
16:05	12.1	12.4	12.8	13.1	13.4	13.9	6.7	5.1	-9.9	2.6	24	24	23
16:15	12.1	12.4	12.8	13.1	13.4	13.9	6.7	5.1	-9.9	2.1	24	24	23
16:25	12.1	12.4	12.8	13.1	13.4	13.8	6.7	5.1	-9.9	2.6	24	23	22
16:35	12.0	12.4	12.7	13.1	13.4	13.8	7.7	6.2	-9.9	2.6	24	23	23
16:45	12.2	12.5	12.7	13.0	13.1	13.5	8.7	7.2	-9.9	3.1	25	23	22
16:55	12.0	12.4	12.7	12.9	13.0	13.5	9.3	7.7	-9.9	3.1	24	23	20
17:05	12.1	12.4	12.6	12.9	13.0	13.4	9.3	7.7	-9.9	3.6	25	23	21
17:15	12.1	12.4	12.6	12.8	13.0	13.3	9.3	7.7	-9.9	3.1	25	23	21
17:25	12.0	12.3	12.5	12.8	13.0	13.3	9.3	7.7	-9.9	2.6	25	24	22
17:35	11.9	12.2	12.4	12.7	12.9	13.2	8.7	7.2	-9.9	2.6	25	24	22

17:45	11.9	12.2	12.4	12.8	12.9	13.2	8.7	7.2	-9.9	2.6	25	24	22
17:55	11.8	12.2	12.5	12.7	12.8	13.0	8.7	7.2	-9.9	2.6	25	24	23
18:05	11.8	12.1	12.4	12.6	12.7	13.0	8.7	7.2	-9.9	2.6	25	24	23
18:15	11.9	12.1	12.3	12.4	12.6	12.9	9.3	7.2	-9.9	2.6	24	23	21
18:25	11.7	12.0	12.2	12.3	12.5	12.8	9.8	7.7	-9.9	2.6	24	23	21
18:35	11.6	11.9	12.2	12.3	12.5	12.8	10.3	7.7	-9.9	2.6	24	23	22
18:45	11.5	11.8	12.1	12.3	12.5	12.7	10.3	8.2	-9.9	3.1	24	23	22
18:55	11.4	11.7	12.0	12.3	12.4	12.7	10.3	8.2	-9.9	2.6	24	23	22
19:05	11.4	11.6	11.9	12.1	12.3	12.6	10.3	8.2	-9.9	3.1	24	23	20
19:15	11.3	11.5	11.8	12.0	12.2	12.6	10.8	8.7	-9.9	3.1	24	23	20
19:25	11.2	11.4	11.8	12.0	12.2	12.5	11.3	8.7	-9.9	3.6	24	24	23
19:35	10.9	11.1	11.4	11.7	12.0	12.3	11.8	10.3	-9.9	5.1	26	25	24
19:45	11.5	11.6	11.5	11.7	11.8	11.5	12.4	10.3	-9.9	4.6	28	28	27
19:55	10.6	10.7	10.9	11.1	11.2	11.3	9.3	7.2	-9.9	3.1	26	24	20
20:05	11.5	11.5	11.4	11.0	10.9	11.2	9.3	6.7	-9.9	3.1	25	24	20
20:15	11.1	11.2	10.8	10.6	10.8	11.1	9.3	6.7	-9.9	3.1	24	22	19
20:25	11.2	11.4	11.3	10.8	10.9	11.1	9.8	7.2	-9.9	2.6	24	22	21
20:35	11.2	11.4	11.5	11.3	11.2	11.2	9.8	7.7	-9.9	2.6	23	22	19
20:45	11.1	11.3	11.4	11.1	11.1	11.2	9.8	7.7	-9.9	2.6	23	22	20
20:55	11.0	11.3	11.4	11.3	11.0	11.3	10.3	7.7	-9.9	2.6	23	22	20
21:05	10.9	11.2	11.4	11.2	11.1	11.4	10.3	8.2	-9.9	2.6	23	22	20
21:15	10.8	11.1	11.3	11.3	11.2	11.5	10.3	8.7	-9.9	2.6	23	22	20
21:25	10.6	10.8	11.1	11.0	11.1	11.5	10.3	8.7	-9.9	3.1	22	21	20
21:35	10.4	10.6	10.9	11.0	11.2	11.5	10.8	8.7	-9.9	3.1	23	21	21
21:45	10.3	10.5	10.8	11.0	11.2	11.5	11.3	8.7	-9.9	3.6	23	21	22
21:55	10.2	10.5	10.8	11.0	11.2	11.6	11.3	8.7	-9.9	3.6	23	22	20
22:05	10.0	10.3	10.7	11.0	11.2	11.6	11.3	9.3	-9.9	4.6	23	22	21
22:15	9.8	10.1	10.5	10.8	11.0	11.4	11.8	9.8	-9.9	4.6	24	23	22
22:25	9.6	10.0	10.3	10.6	10.8	11.1	11.8	9.8	-9.9	4.6	24	23	24
22:35	9.4	9.7	10.1	10.4	10.6	10.9	10.8	9.3	-9.9	4.6	24	23	23
22:45	9.4	9.7	9.9	10.2	10.3	10.6	10.8	8.7	-9.9	4.1	24	24	23
22:55	9.3	9.5	9.8	10.1	10.3	10.6	11.3	9.3	-9.9	4.1	24	23	23
23:05	9.2	9.5	9.8	10.0	10.3	10.6	11.3	9.3	-9.9	3.6	23	23	20
23:15	9.3	9.5	9.8	10.0	10.2	10.6	11.3	8.7	-9.9	4.1	24	22	21
23:25	9.1	9.3	9.6	9.9	10.2	10.6	10.8	8.7	-9.9	4.1	24	23	20
23:35	8.9	9.2	9.5	9.8	10.0	10.5	10.3	7.7	-9.9	3.6	24	24	22
23:45	9.0	9.3	9.6	9.9	10.1	10.5	9.8	7.7	-9.9	3.6	26	25	23
23:55	9.1	9.3	9.6	9.9	10.1	10.5	9.8	7.7	-9.9	3.6	26	25	23

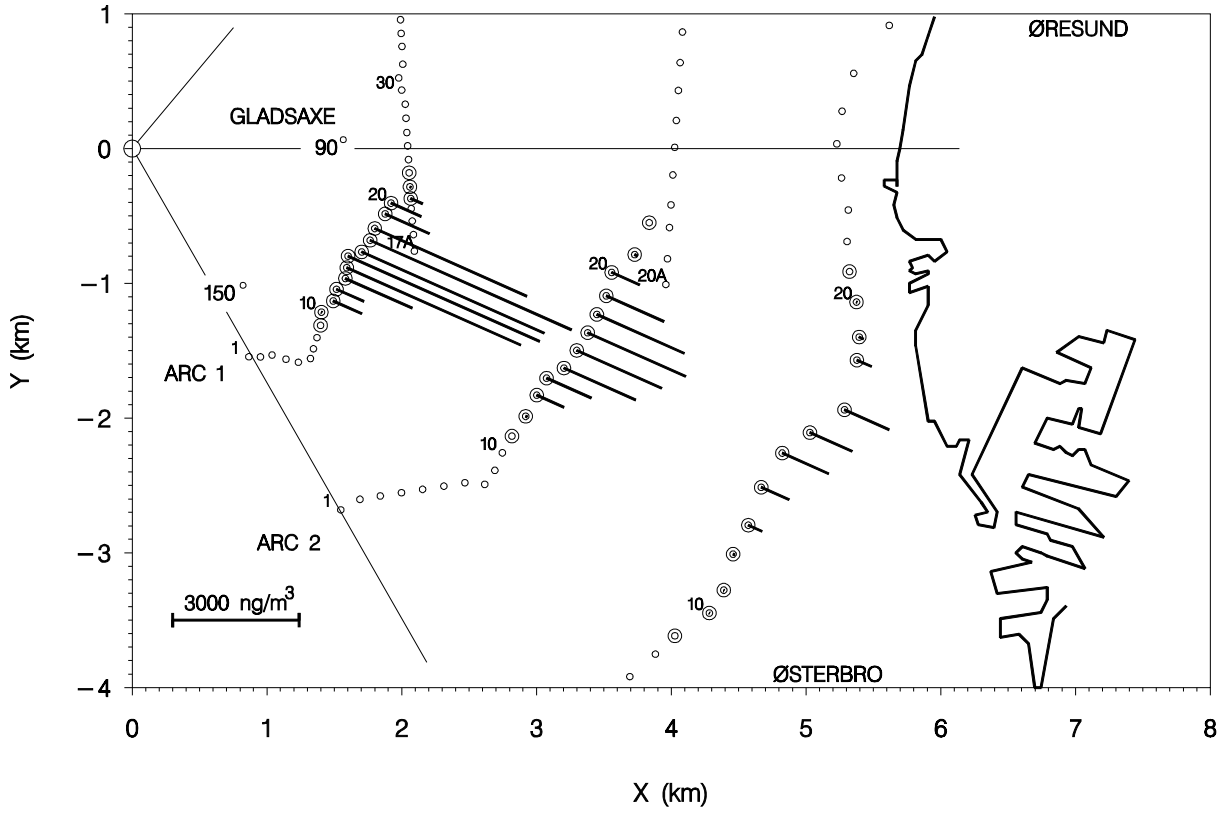

Figure 5. Experiment on October 19, 1978. The bars indicate the mean measured tracer concentrations for the period 12:13-13:13 (run 1-3, Table 14-16), for the individual measuring positions.

Table 14. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on October 19, 1978; Arc 1

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
9	0	0	0	0	
					92
10	42	0	0	14	
					112
11	2035	186	0	740	
					89
12	1473	614	39	709	
					100
13	2517	1816	859	1731	
					77
14	3245	5455	4859	4519	
					83
15	3157	7016	4753	4975	
					69
16	2245	6770	5209	4742	
					104
17	2877	5472	7332	5227	
					94
18	2833	3806	5209	3950	
					130
19	351	1114	1974	1146	
					91
20	270	919	1147	779	
					90
21	77	77	751	302	
					77
22	0	0	84	28	
					93
23	0	0	0	0	
sampling period	12:13-12:33	12:33-12:53	12:53-13:13	12:13-13:13	

Direction of the plume centreline: 294 degrees
plume centre position (x,y) = (1708, -760)

Table 15. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on October 19, 1978; Arc 2

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run 1-3	
11	0	0	0	0	
					175
12	0	107	0	36	
					177
13	1246	840	28	705	
					144
14	1887	1478	107	1157	
					119
15	1406	3133	1032	1857	
					158
16	-	-	-	2206	
					152
17	1624	2563	3445	2544	
					151
18	1235	2225	3347	2269	
					154
19	712	538	3231	1494	
					176
20	434	0	-	721	
					188
21	25	0	185	70	
					260
22	0	0	0	0	
sampling period	12:13-12:33	12:33-12:53	12:53-13:13	12:13-13:13	

Direction of the plume centreline: 293 degrees
Plume centre position (x,y) = (3354, -1409)

Table 16. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on October 19, 1978; Arc 3

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
9	0	0	0	0	
					257
10	0	18	0	6	
					199
11	0	21	0	7	
					272
12	50	85	0	45	
					242
13	259	800	0	353	
					296
14	533	1502	121	718	
					295
15	915	2035	657	1202	
					221
16	952	1112	-	1094	
					257
17	1176	434	1866	1158	
					376
18	551	53	522	375	
					164
19	71	0	252	108	
					230
20	0	0	32	11	
					187
21	0	0	0	0	
sampling period	12:13-12:33	12:33-12:53	12:53-13:13	12:13-13:13	

Direction of the plume centreline: 294 degrees
Plume centre position (x,y) = (4963, -2157)

Table 17. Meteorological measurements along the tower at the point of release. Time indications are in GMT+1.

Experiment on October 19, 1978

Time	Temperature (deg Celcius) height						Wind-speed (m/s) height				Wind-direction (deg/10) height		
	200 (m)	160 (m)	120 (m)	80 (m)	40 (m)	2 (m)	200 (m)	120 (m)	60 (m)	10 (m)	200 (m)	120 (m)	10 (m)
0:05	8.0	8.3	8.7	9.0	9.2	9.6	11.8	9.8	-9.9	4.1	27	27	26
0:15	8.1	8.4	8.7	9.1	9.3	9.6	11.3	9.3	-9.9	4.1	27	27	26
0:25	8.3	8.6	8.9	9.1	9.3	9.6	11.3	9.3	-9.9	4.1	28	27	25
0:35	8.3	8.5	8.9	9.2	9.4	9.7	11.3	9.3	-9.9	4.1	28	27	26
0:45	8.6	8.7	9.0	9.3	9.5	9.8	11.8	9.3	-9.9	4.1	28	27	26
0:55	8.6	8.8	9.1	9.4	9.6	9.9	12.4	9.8	-9.9	4.1	28	27	25
1:05	8.5	8.7	9.0	9.3	9.6	10.0	12.4	9.8	-9.9	4.1	28	27	25
1:15	8.6	8.7	9.0	9.3	9.6	9.9	12.4	9.8	-9.9	4.1	28	27	26
1:25	8.5	8.5	8.8	9.0	9.2	9.6	12.4	9.8	-9.9	4.1	28	27	25
1:35	8.4	8.6	8.8	9.0	9.2	9.6	12.4	10.3	-9.9	4.1	27	26	26
1:45	8.6	8.7	8.8	8.9	9.1	9.5	12.4	9.8	-9.9	4.1	27	26	25
1:55	8.6	8.7	8.8	9.0	9.2	9.5	12.4	9.8	-9.9	3.6	27	26	25
2:05	8.6	8.6	8.8	9.0	9.2	9.6	11.8	9.3	-9.9	3.6	27	26	25
2:15	8.5	8.7	8.8	9.0	9.1	9.5	11.3	8.7	-9.9	4.1	27	26	23
2:25	8.4	8.6	8.8	9.0	9.1	9.5	10.8	8.7	-9.9	4.1	27	25	25
2:35	8.6	8.8	8.9	9.0	9.2	9.6	11.3	8.2	-9.9	3.6	27	26	24
2:45	8.6	8.8	9.0	9.2	9.4	9.7	10.8	7.7	-9.9	3.1	28	27	26
2:55	8.7	8.9	9.1	9.4	9.6	9.9	10.3	7.7	-9.9	3.1	28	28	27
3:05	8.9	8.9	9.1	9.4	9.6	9.9	9.8	7.2	-9.9	2.6	28	27	25
3:15	8.8	9.0	9.2	9.5	9.6	10.0	10.8	7.7	-9.9	2.6	29	28	25
3:25	9.3	9.3	9.3	9.7	9.9	10.0	10.8	7.7	-9.9	2.6	29	28	26
3:35	9.1	9.3	9.6	9.8	10.0	10.1	10.8	7.7	-9.9	2.6	29	28	26
3:45	9.1	9.3	9.6	9.9	10.0	10.2	10.8	8.2	-9.9	2.6	28	27	27
3:55	9.2	9.4	9.6	9.8	9.9	10.2	10.8	8.2	-9.9	3.1	28	27	24
4:05	9.1	9.3	9.5	9.7	9.9	10.2	11.3	8.2	-9.9	3.6	28	27	25
4:15	9.1	9.3	9.6	9.9	10.1	10.4	11.8	9.3	-9.9	4.1	29	28	26
4:25	9.1	9.4	9.7	10.0	10.2	10.5	11.3	9.3	-9.9	3.6	29	28	26
4:35	9.2	9.5	9.7	10.1	10.3	10.5	11.3	9.3	-9.9	3.6	29	28	28
4:45	9.2	9.5	9.8	10.1	10.4	10.6	11.8	9.3	-9.9	4.1	29	29	27
4:55	9.2	9.5	9.8	10.1	10.3	10.2	11.8	9.8	-9.9	4.1	29	28	27
5:05	9.2	9.4	9.7	9.9	10.1	10.1	11.8	9.3	-9.9	4.1	29	29	27
5:15	9.3	9.6	9.7	9.9	10.0	9.8	12.4	9.3	-9.9	3.6	30	29	28
5:25	9.4	9.5	9.7	9.8	10.0	9.9	12.4	9.3	-9.9	3.1	30	29	28
5:35	9.3	9.4	9.7	9.8	10.0	9.7	11.8	9.3	-9.9	2.6	29	29	27
5:45	9.2	9.4	9.6	9.8	10.0	9.7	11.8	8.7	-9.9	2.6	30	29	28
5:55	9.3	9.4	9.6	9.8	9.9	9.6	11.8	8.7	-9.9	2.6	30	29	28
6:05	9.2	9.4	9.6	9.8	10.0	9.9	11.8	8.7	-9.9	3.1	29	29	27
6:15	9.3	9.4	9.6	9.8	10.0	10.0	11.8	8.7	-9.9	3.1	30	28	27
6:25	9.3	9.5	9.7	10.0	10.1	10.2	11.8	9.3	-9.9	3.1	30	29	26
6:35	9.2	9.5	9.8	10.0	10.2	10.3	12.4	9.3	-9.9	3.6	29	28	27
6:45	9.2	9.5	9.7	10.0	10.2	10.4	11.8	9.3	-9.9	3.6	30	29	27
6:55	9.1	9.4	9.7	10.0	10.3	10.4	11.3	8.7	-9.9	3.6	29	29	28
7:05	9.1	9.4	9.7	10.0	10.2	10.5	11.3	8.7	-9.9	3.6	30	29	27
7:15	9.0	9.2	9.5	9.9	10.2	10.4	10.8	8.2	-9.9	3.1	30	29	28
7:25	8.9	9.2	9.5	9.9	10.1	10.4	10.3	7.7	-9.9	3.1	29	29	28
7:35	8.9	9.2	9.5	9.9	10.1	10.5	9.8	7.7	-9.9	3.1	29	29	28
7:45	8.9	9.1	9.5	9.8	10.1	10.4	9.3	7.7	-9.9	3.1	30	29	28

7:55	8.6	9.0	9.4	9.7	9.9	10.4	8.2	6.7	-9.9	3.1	31	31	30
8:05	8.9	9.2	9.5	9.8	10.0	10.3	8.2	6.7	-9.9	2.6	31	30	28
8:15	9.1	9.3	9.6	9.9	10.1	10.5	8.2	6.2	-9.9	2.1	31	30	29
8:35	9.1	9.5	9.8	10.1	10.4	10.8	8.2	6.7	-9.9	2.6	31	30	30
8:45	9.1	9.4	9.8	10.1	10.4	10.9	7.7	6.2	-9.9	2.6	31	30	29
8:55	9.1	9.5	9.8	10.2	10.5	11.1	8.2	6.7	-9.9	3.1	31	31	30
9:05	9.1	9.5	9.8	10.2	10.5	11.1	8.2	6.7	-9.9	2.6	31	31	29
9:15	9.1	9.5	9.8	10.2	10.5	11.2	8.2	6.7	-9.9	2.6	31	30	30
9:25	9.1	9.4	9.8	10.2	10.5	11.1	7.7	6.2	-9.9	2.6	31	31	29
9:35	9.1	9.5	9.9	10.3	10.6	11.3	7.2	5.7	-9.9	2.6	31	30	29
9:45	9.2	9.6	10.0	10.4	10.7	11.4	7.7	6.2	-9.9	2.6	31	30	28
9:55	9.2	9.6	10.0	10.4	10.7	11.4	7.7	6.7	-9.9	3.1	31	30	29
10:05	9.3	9.7	10.1	10.6	10.9	11.7	7.7	6.7	-9.9	3.1	31	31	29
10:15	9.4	9.7	10.1	10.6	11.0	11.8	7.7	6.7	-9.9	3.1	31	30	30
10:25	9.4	9.8	10.2	10.7	11.0	11.8	7.7	6.7	-9.9	3.1	31	30	29
10:35	9.4	9.8	10.2	10.6	11.0	11.9	6.2	5.7	-9.9	2.6	31	31	29
10:45	9.3	9.7	10.1	10.4	10.8	11.6	7.2	6.2	-9.9	2.6	31	31	30
10:55	9.4	9.8	10.2	10.6	10.9	11.7	7.7	6.7	-9.9	3.1	31	30	28
11:05	9.6	10.0	10.3	10.7	11.1	12.0	7.2	6.7	-9.9	3.1	31	31	29
11:15	9.6	10.0	10.4	10.9	11.2	12.0	6.7	6.2	-9.9	3.1	31	31	28
11:25	9.7	10.1	10.6	11.0	11.3	12.4	6.7	6.2	-9.9	3.1	31	30	29
11:35	9.9	10.2	10.6	11.0	11.3	12.2	5.7	5.7	-9.9	2.6	31	31	31
11:45	9.8	10.2	10.6	10.9	11.2	12.0	5.7	5.7	-9.9	2.6	32	31	29
11:55	9.8	10.2	10.6	11.0	11.3	12.4	5.7	5.7	-9.9	2.6	32	32	30
12:05	9.9	10.3	10.7	11.1	11.5	12.5	5.7	5.7	-9.9	2.6	31	31	29
12:15	9.9	10.3	10.7	11.1	11.4	12.6	5.7	5.1	-9.9	2.6	31	31	30
12:25	9.9	10.3	10.7	11.1	11.5	12.2	5.1	4.6	-9.9	2.1	32	31	28
12:35	10.0	10.3	10.7	11.1	11.4	12.5	5.1	4.6	-9.9	2.1	32	31	28
12:45	9.8	10.2	10.6	11.0	11.3	12.2	5.7	5.1	-9.9	2.6	31	31	29
12:55	9.9	10.3	10.7	11.1	11.4	12.5	5.7	5.1	-9.9	2.6	31	31	29
13:05	10.1	10.5	10.9	11.3	11.7	12.7	5.7	5.1	-9.9	2.6	31	31	29
13:15	10.1	10.4	10.8	11.2	11.6	12.3	6.2	5.7	-9.9	3.1	30	30	28
13:25	9.9	10.3	10.7	11.1	11.4	12.2	6.2	5.1	-9.9	3.1	30	30	29
13:35	10.1	10.5	10.9	11.3	11.7	12.8	6.7	5.7	-9.9	2.6	30	30	30
13:45	10.2	10.6	10.9	11.3	11.6	13.1	6.2	5.1	-9.9	2.6	30	30	29
13:55	10.3	10.6	11.0	11.4	11.7	12.5	6.7	6.2	-9.9	3.1	31	31	28
14:05	10.4	10.7	11.1	11.6	11.9	12.8	6.7	5.7	-9.9	3.1	31	31	30
14:15	10.6	11.0	11.5	12.1	12.6	14.1	6.7	6.2	-9.9	3.1	31	30	27
14:25	10.5	11.0	11.3	11.9	12.3	13.5	6.7	6.2	-9.9	3.1	31	30	30
14:35	10.6	11.1	11.4	11.8	12.2	13.2	6.7	6.2	-9.9	3.1	31	30	29
14:45	10.6	11.0	11.4	11.8	12.1	13.2	6.2	6.2	-9.9	3.1	31	31	29
14:55	10.8	11.2	11.6	12.1	12.5	13.4	6.2	5.7	-9.9	3.1	30	30	28
15:05	10.8	11.2	11.7	12.2	12.6	13.4	6.2	5.7	-9.9	3.1	30	30	29
15:15	10.6	11.0	11.4	11.8	12.1	13.1	6.7	5.7	-9.9	3.6	31	30	29
15:25	10.5	10.9	11.3	11.7	12.0	12.9	7.2	6.7	-9.9	3.6	31	30	30
15:35	10.3	10.8	11.2	11.6	11.9	12.3	7.2	6.7	-9.9	3.6	30	30	28
15:45	10.2	10.6	11.0	11.4	11.7	12.3	7.2	6.2	-9.9	3.1	31	30	29
15:55	10.2	10.6	11.0	11.3	11.6	11.8	7.7	6.7	-9.9	3.1	31	30	30
16:05	10.2	10.6	10.9	11.3	11.5	12.0	7.7	6.7	-9.9	3.1	31	30	28
16:15	10.1	10.5	10.9	11.2	11.4	12.0	7.2	6.2	-9.9	3.1	30	30	28
16:25	10.1	10.4	10.8	11.1	11.3	11.3	7.2	5.7	-9.9	2.6	31	30	29
16:35	10.3	10.5	10.7	10.9	11.2	11.1	7.2	5.7	-9.9	2.6	31	30	29
16:45	10.2	10.6	10.8	11.0	11.0	10.7	7.7	5.7	-9.9	2.1	31	30	28
16:55	10.2	10.6	10.9	11.0	11.1	10.6	7.7	5.7	-9.9	2.1	31	30	27
17:05	10.3	10.6	10.9	11.1	11.0	10.6	7.7	6.2	-9.9	1.5	30	30	26
17:15	10.4	10.6	10.9	11.0	10.9	10.3	7.7	6.2	-9.9	2.1	30	29	27
17:25	10.4	10.8	11.0	11.1	10.9	10.3	8.2	6.2	-9.9	2.1	30	29	27
17:35	10.4	10.8	11.0	11.0	10.9	10.4	8.2	6.7	-9.9	1.5	30	29	26
17:45	10.4	10.7	11.0	11.0	10.9	10.3	8.7	7.2	-9.9	2.1	30	29	27

17:55	10.3	10.6	10.9	11.0	10.7	10.2	8.7	7.2	-9.9	2.1	30	29	28
18:05	10.2	10.5	10.8	10.8	10.7	10.2	8.7	7.2	-9.9	2.1	30	29	27
18:15	10.3	10.6	10.8	10.7	10.6	10.1	9.3	7.2	-9.9	2.1	30	29	27
18:25	10.1	10.3	10.6	10.5	10.4	10.0	9.3	7.2	-9.9	2.1	30	29	26
18:35	10.2	10.4	10.5	10.3	10.3	10.0	9.3	7.2	-9.9	2.1	30	29	26
18:45	10.3	10.5	10.5	10.2	10.2	9.8	9.3	7.2	-9.9	1.5	31	29	26
18:55	10.3	10.3	10.3	10.2	10.1	9.8	9.3	7.2	-9.9	1.5	31	29	26
19:05	10.1	10.3	10.4	10.3	10.1	9.7	9.3	7.2	-9.9	2.1	31	29	27
19:15	10.2	10.4	10.3	10.2	10.1	9.8	9.3	7.2	-9.9	1.5	31	29	25
19:25	10.4	10.5	10.3	10.2	10.1	9.9	9.8	7.2	-9.9	1.5	31	29	26
19:35	10.4	10.6	10.5	10.3	10.2	10.1	9.8	7.2	-9.9	2.1	31	30	26
19:45	10.3	10.6	10.5	10.2	10.1	10.1	10.3	7.7	-9.9	2.1	31	29	28
19:55	10.3	10.6	10.6	10.4	10.1	10.2	10.3	7.7	-9.9	2.1	31	30	27
20:05	10.3	10.5	10.8	10.4	10.1	10.3	10.3	8.2	-9.9	1.5	31	30	27
20:15	10.2	10.5	10.6	10.4	10.2	10.4	10.3	8.2	-9.9	1.5	31	30	28
20:25	10.2	10.6	10.8	10.8	10.6	10.6	10.3	8.2	-9.9	2.1	31	31	28
20:35	10.0	10.3	10.5	10.6	10.6	10.7	9.8	7.7	-9.9	2.1	31	30	27
20:45	9.9	10.2	10.4	10.5	10.6	10.7	9.8	7.2	-9.9	2.1	31	30	29
20:55	9.7	10.0	10.2	10.4	10.5	10.6	9.3	6.7	-9.9	2.1	31	30	28
21:05	9.6	9.8	10.1	10.2	10.3	10.3	9.3	7.2	-9.9	2.6	31	31	29
21:15	9.6	9.8	10.0	10.1	10.1	10.0	10.3	7.7	-9.9	2.6	31	30	29
21:25	9.6	9.8	9.9	10.0	10.0	9.9	10.3	7.7	-9.9	2.6	31	31	28
21:35	9.5	9.8	9.9	9.9	9.9	9.7	10.8	8.2	-9.9	2.6	31	31	29
21:45	9.5	9.7	9.8	9.8	9.8	9.6	10.8	8.2	-9.9	2.1	31	30	28
21:55	9.6	9.8	9.8	9.8	9.8	9.5	10.8	8.2	-9.9	2.1	31	30	29
22:05	9.5	9.7	9.8	9.7	9.5	9.4	10.8	7.7	-9.9	2.1	31	30	27
22:15	9.6	9.7	9.9	9.8	9.4	9.2	10.3	7.7	-9.9	2.1	31	30	28
22:25	9.6	9.7	9.8	9.6	9.3	9.0	10.3	7.7	-9.9	2.1	31	29	28
22:35	9.5	9.7	9.8	9.5	9.1	8.9	10.3	7.7	-9.9	1.5	31	29	28
22:45	9.6	9.7	9.8	9.4	9.1	8.7	10.3	8.2	-9.9	2.1	31	29	28
22:55	9.7	9.8	9.8	9.4	9.2	8.8	10.3	8.2	-9.9	2.1	31	30	27
23:05	9.7	9.8	9.9	9.4	9.1	8.8	10.3	8.2	-9.9	2.1	31	30	27
23:15	9.7	9.9	10.0	9.5	9.1	8.8	10.8	8.7	-9.9	2.1	31	30	27
23:25	9.9	10.1	10.2	9.5	9.0	8.8	10.8	8.7	-9.9	2.1	31	29	27
23:35	9.5	9.8	10.1	9.4	9.1	9.1	10.3	8.2	-9.9	2.1	30	29	26
23:45	10.8	10.3	9.9	9.4	9.3	9.4	10.8	8.7	-9.9	2.6	30	29	27
23:55	10.6	10.5	10.0	9.5	9.2	9.4	10.8	8.2	-9.9	2.1	30	28	25

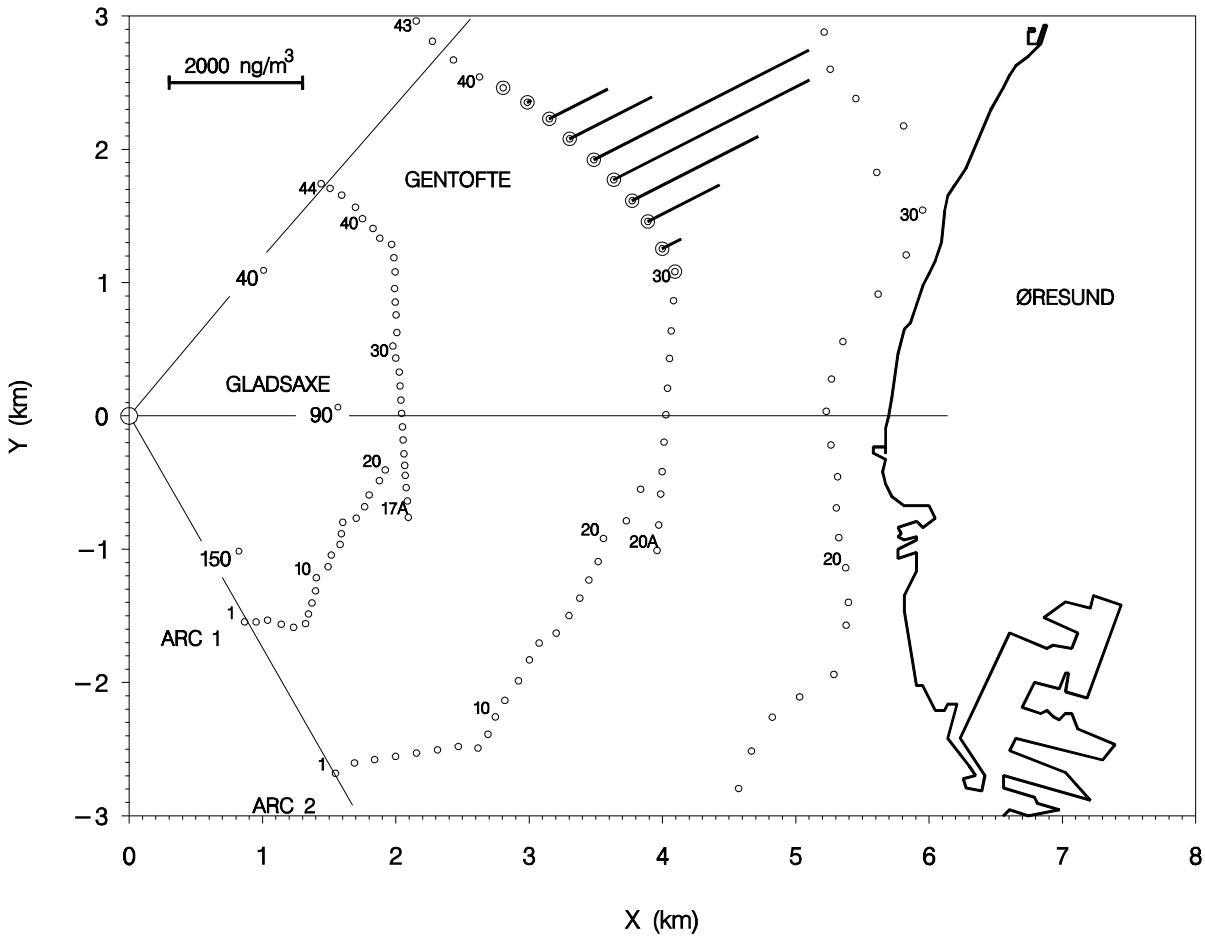

Figure 6. Experiment on November 3, 1978. The bars indicate the mean measured tracer concentrations for the period 13:20-14:20 (run 1-3, Table 18), for the individual measuring positions.

Table 18. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on November 3, 1978; Arc 2

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
30	0	0	0	0	
					196
31	0	267	669	312	
					231
32	357	1699	1543	1200	
					193
33	694	2011	3642	2116	
					203
34	-	2549	6017	3286	
					201
35	1890	2428	6520	3613	
					222
36	867	1882	1387	1379	
					203
37	1925	520	486	977	
					184
38	42	87	52	60	
					180
39	0	0	0	0	
sampling period	13:20-13:40	13:40-14:00	14:00-14:20	13:20-14:20	

Direction of the plume centreline: 243 degrees
Plume centre position (x,y) = (3585, 1823)

Table 19. Meteorological measurements along the tower at the point of release. Time indications are in GMT+1.

Experiment on November 3, 1978

Time	Temperature (deg Celcius) height						Wind-speed (m/s) height				Wind-direction (deg/10) height		
	200 (m)	160 (m)	120 (m)	80 (m)	40 (m)	2 (m)	200 (m)	120 (m)	60 (m)	10 (m)	200 (m)	120 (m)	10 (m)
0:05	9.2	9.4	9.8	10.0	10.2	10.7	11.8	10.3	-9.9	5.1	24	24	22
0:15	9.2	9.4	9.8	10.0	10.2	10.6	11.8	10.3	-9.9	5.1	24	24	22
0:25	9.2	9.4	9.8	9.9	10.1	10.5	11.8	9.8	-9.9	5.1	25	24	23
0:35	9.2	9.4	9.8	9.9	10.1	10.5	11.8	9.8	-9.9	4.6	25	24	22
0:45	9.3	9.4	9.9	9.9	10.1	10.5	11.8	9.8	-9.9	4.1	24	24	22
0:55	9.4	9.5	9.9	10.0	10.1	10.5	10.8	8.7	-9.9	4.1	24	24	23
1:05	9.4	9.6	9.9	10.0	10.2	10.5	11.3	9.3	-9.9	4.1	25	24	23
1:15	9.4	9.6	9.8	10.0	10.2	10.6	10.8	8.7	-9.9	4.1	25	24	24
1:25	9.6	9.7	9.9	10.1	10.3	10.7	10.8	8.7	-9.9	4.6	25	24	24
1:35	9.7	9.8	10.0	10.2	10.4	10.8	10.8	8.7	-9.9	4.1	26	25	24
1:45	9.7	9.9	10.2	10.3	10.5	10.9	11.8	9.3	-9.9	5.1	26	25	24
1:55	10.0	10.1	10.3	10.4	10.6	10.9	11.8	9.8	-9.9	5.1	26	26	25
2:05	10.1	10.2	10.4	10.6	10.7	11.0	12.4	9.8	-9.9	4.6	26	26	24
2:15	10.0	10.1	10.4	10.5	10.7	11.1	12.4	10.3	-9.9	4.6	27	26	24
2:25	9.9	10.1	10.3	10.5	10.7	11.1	12.4	9.8	-9.9	4.6	27	26	25
2:35	10.1	10.2	10.4	10.6	10.7	11.1	11.8	9.8	-9.9	4.1	27	26	25
2:45	10.2	10.3	10.5	10.6	10.8	11.1	11.8	9.8	-9.9	3.6	27	26	25
2:55	10.1	10.3	10.5	10.8	10.9	11.2	11.8	9.3	-9.9	4.1	28	27	26
3:05	10.1	10.3	10.6	10.8	11.0	11.3	11.3	8.7	-9.9	3.6	28	27	27
3:15	10.1	10.4	10.7	10.9	11.2	11.4	12.9	10.3	-9.9	4.6	29	28	27
3:25	10.1	10.3	10.7	11.0	11.3	11.4	12.4	10.3	-9.9	4.1	29	29	27
3:35	10.0	10.3	10.7	11.0	11.3	11.4	11.8	9.8	-9.9	4.1	29	29	27
3:45	9.8	10.2	10.6	11.0	11.3	11.4	11.8	9.3	-9.9	4.1	30	29	28
3:55	9.9	10.3	10.6	11.0	11.2	11.3	11.3	8.7	-9.9	3.6	30	29	27
4:05	9.6	10.0	10.3	10.7	11.0	11.2	10.3	8.2	-9.9	3.6	30	30	28
4:15	9.6	10.0	10.2	10.6	10.8	10.8	10.3	7.7	-9.9	3.6	31	30	28
4:25	9.5	9.8	10.1	10.5	10.7	10.6	10.3	7.7	-9.9	3.1	31	30	29
4:35	9.4	9.7	10.0	10.3	10.5	10.4	10.3	8.2	-9.9	3.1	31	30	29
4:45	9.3	9.6	9.8	10.1	10.3	10.2	11.3	8.7	-9.9	3.1	31	31	28
4:55	9.2	9.4	9.6	9.9	10.0	10.1	11.3	8.7	-9.9	3.1	31	31	29
5:05	9.1	9.3	9.5	9.8	9.9	9.9	11.8	8.7	-9.9	3.1	31	30	29
5:15	8.9	9.2	9.4	9.7	9.8	9.7	11.3	8.2	-9.9	3.1	31	30	29
5:25	8.7	9.0	9.3	9.5	9.6	9.6	10.8	8.2	-9.9	3.6	31	31	29
5:35	8.7	8.9	9.3	9.4	9.5	9.3	10.3	7.7	-9.9	3.1	32	31	28
5:45	8.7	8.9	9.1	9.3	9.3	9.1	10.3	7.7	-9.9	3.1	32	31	28
5:55	8.9	9.0	9.1	9.2	9.1	8.9	10.3	7.7	-9.9	3.1	32	31	29
6:05	9.0	9.0	9.0	9.1	9.0	8.7	10.3	7.7	-9.9	2.6	32	31	29
6:15	8.8	9.1	8.8	8.9	8.8	8.6	10.3	8.2	-9.9	3.1	32	31	29
6:25	8.8	8.7	8.6	8.7	8.7	8.4	10.3	8.2	-9.9	3.1	32	31	29
6:35	8.3	8.4	8.6	8.6	8.4	8.2	10.8	8.7	-9.9	3.1	32	31	29
6:45	8.3	8.6	8.5	8.4	8.2	8.0	11.3	8.7	-9.9	3.1	32	31	29
6:55	8.1	8.5	8.6	8.5	8.1	7.8	10.8	8.7	-9.9	3.1	32	31	29
7:05	7.9	8.3	8.6	8.6	8.1	7.6	10.3	8.7	-9.9	2.6	32	31	29
7:15	7.9	8.1	8.3	8.3	8.0	7.7	10.3	8.2	-9.9	2.6	32	31	29
7:25	7.8	8.1	8.3	8.0	7.8	7.4	10.3	8.2	-9.9	2.6	32	31	28
7:35	8.1	8.2	8.2	8.2	7.8	7.4	10.8	8.2	-9.9	2.6	32	31	27
7:45	7.8	7.7	7.9	7.8	7.9	7.5	10.8	7.7	-9.9	2.1	32	30	26

7:55	7.9	8.1	8.1	7.8	7.6	7.3	10.8	7.2	-9.9	2.1	32	31	27
8:05	7.9	8.1	8.1	7.8	7.6	7.3	10.8	7.7	-9.9	1.5	31	30	27
8:15	7.6	7.8	7.9	7.8	7.6	7.5	10.8	7.2	-9.9	1.5	31	30	26
8:25	7.6	7.5	7.5	7.6	7.7	8.0	10.3	6.7	-9.9	1.5	31	29	25
8:35	7.7	7.7	7.6	7.6	7.8	8.4	10.3	6.7	-9.9	1.5	31	30	27
8:45	7.9	8.2	8.1	8.1	7.9	8.4	10.3	7.2	-9.9	2.1	31	35	30
8:55	7.9	8.2	8.4	8.4	8.4	9.0	9.8	7.7	-9.9	1.5	31	30	29
9:05	7.7	7.8	8.0	8.3	8.6	9.5	9.3	7.2	-9.9	2.1	31	30	27
9:15	7.5	7.8	8.1	8.4	8.7	9.7	8.2	5.7	-9.9	2.1	31	30	27
9:25	7.6	7.8	8.1	8.5	8.8	10.2	7.7	5.1	-9.9	2.1	31	29	28
9:35	7.5	7.8	8.1	8.6	8.9	10.2	7.2	5.1	-9.9	2.1	31	30	28
9:45	7.5	7.8	8.2	8.6	9.0	10.6	6.2	4.6	-9.9	2.1	31	30	28
9:55	7.7	8.0	8.3	8.8	9.1	10.9	6.2	4.6	-9.9	2.1	31	29	28
10:05	7.7	8.0	8.4	8.8	9.3	10.9	5.1	4.1	-9.9	2.1	31	30	26
10:15	7.7	8.1	8.5	8.9	9.3	11.1	4.6	3.6	-9.9	2.1	30	29	26
10:25	7.7	8.2	8.6	9.1	9.6	11.7	4.6	4.1	-9.9	2.6	30	29	28
10:35	7.9	8.3	8.7	9.3	9.6	11.3	4.6	4.6	-9.9	2.6	29	28	27
10:45	7.9	8.4	8.7	9.2	9.5	11.0	4.6	4.6	-9.9	2.6	28	28	27
10:55	7.9	8.3	8.7	9.1	9.4	10.1	4.6	4.6	-9.9	2.6	27	26	24
11:05	8.1	8.6	9.1	9.5	9.8	12.1	4.6	4.1	-9.9	2.6	27	28	27
11:15	8.2	8.5	8.9	9.4	9.8	11.0	4.6	4.1	-9.9	3.1	26	26	23
11:25	8.2	8.6	9.0	9.5	9.9	11.3	4.6	4.6	-9.9	3.1	27	26	25
11:35	8.2	8.6	9.1	9.5	10.1	11.7	5.1	4.6	-9.9	2.6	28	27	26
11:45	8.4	8.8	9.2	9.6	10.1	12.0	5.7	5.1	-9.9	3.1	29	28	27
11:55	8.6	9.0	9.4	10.0	10.2	11.8	5.7	5.1	-9.9	3.1	29	28	26
12:05	8.8	9.2	9.6	10.0	10.4	12.1	5.7	5.1	-9.9	3.6	28	28	28
12:15	9.0	9.4	9.7	10.1	10.6	12.6	4.6	4.6	-9.9	3.1	28	28	29
12:25	9.0	9.4	9.8	10.3	10.7	12.3	4.1	4.1	-9.9	2.1	28	27	25
12:35	9.1	9.5	9.9	10.3	10.8	12.6	4.6	4.6	-9.9	2.6	28	27	27
12:45	9.2	9.5	10.0	10.4	10.8	12.2	4.6	4.6	-9.9	3.1	27	26	25
12:55	9.4	9.8	10.1	10.6	10.9	12.2	4.6	4.6	-9.9	3.1	26	27	24
13:05	9.3	9.8	10.3	10.6	11.0	11.9	4.1	4.1	-9.9	2.6	27	26	22
13:15	9.4	9.8	10.1	10.6	10.9	11.9	4.1	4.1	-9.9	2.6	26	25	23
13:25	9.4	9.9	10.3	10.7	11.0	11.9	4.1	4.1	-9.9	2.6	26	25	23
13:35	9.4	9.9	10.2	10.6	10.9	11.7	4.1	4.1	-9.9	2.6	25	25	24
13:45	9.5	9.8	10.2	10.6	10.9	11.7	4.1	3.6	-9.9	2.6	26	26	25
13:55	9.4	9.8	10.2	10.5	10.8	11.6	4.1	4.1	-9.9	2.6	25	25	24
14:05	9.3	9.7	10.1	10.5	10.8	11.6	4.1	3.6	-9.9	2.6	25	25	25
14:15	9.3	9.7	10.0	10.4	10.8	11.4	4.1	4.1	-9.9	2.6	25	25	23
14:25	9.4	9.8	10.2	10.6	10.9	11.3	4.6	4.1	-9.9	2.6	24	24	23
14:35	9.3	9.8	10.2	10.6	10.8	11.4	5.1	5.1	-9.9	2.6	24	24	24
14:45	9.3	9.7	10.1	10.5	10.8	11.2	5.1	5.1	-9.9	3.1	23	22	21
14:55	9.2	9.6	10.0	10.4	10.7	11.2	5.1	5.1	-9.9	3.1	24	23	22
15:05	9.3	9.7	10.1	10.4	10.7	11.0	5.7	5.1	-9.9	2.6	24	23	21
15:15	9.3	9.7	10.1	10.4	10.7	11.0	6.2	5.7	-9.9	2.6	24	23	23
15:25	9.3	9.7	10.1	10.4	10.7	11.0	5.7	5.1	-9.9	2.6	24	24	22
15:35	9.4	9.8	10.2	10.5	10.7	11.0	6.2	5.1	-9.9	2.1	24	23	23
15:45	9.4	9.8	10.1	10.4	10.6	10.9	6.2	5.7	-9.9	2.6	23	22	21
15:55	9.1	9.5	9.9	10.3	10.5	10.8	6.7	6.2	-9.9	3.1	23	22	21
16:05	8.9	9.3	9.7	10.0	10.2	10.6	7.7	6.7	-9.9	3.1	24	23	21
16:15	9.0	9.3	9.6	9.9	10.1	10.5	8.2	7.2	-9.9	3.1	25	24	22
16:25	8.9	9.2	9.6	9.9	10.1	10.5	8.2	7.2	-9.9	3.1	24	23	21
16:35	8.6	9.0	9.4	9.8	10.1	10.5	8.7	7.2	-9.9	3.1	24	23	23
16:45	8.7	9.0	9.4	9.7	10.0	10.4	8.7	7.7	-9.9	3.6	25	24	22
16:55	8.3	8.7	9.1	9.5	9.7	10.2	8.7	7.2	-9.9	3.6	25	24	23
17:05	8.1	8.3	8.7	9.0	9.3	9.7	8.2	7.2	-9.9	3.6	24	23	21
17:15	8.0	8.3	8.7	9.0	9.2	9.6	8.2	7.2	-9.9	3.6	24	23	23
17:25	7.9	8.2	8.6	8.9	9.1	9.5	8.7	7.2	-9.9	3.6	24	22	21
17:35	8.2	8.4	8.6	8.9	9.1	9.4	9.3	7.7	-9.9	3.1	24	23	21

17:45	8.0	8.2	8.5	8.8	9.0	9.3	9.3	7.7	-9.9	3.1	24	23	21
17:55	8.1	8.3	8.5	8.8	9.0	9.3	9.8	7.2	-9.9	3.1	24	22	21
18:05	8.1	8.3	8.6	8.8	9.0	9.3	9.8	7.2	-9.9	3.1	24	23	21
18:15	7.9	8.2	8.5	8.8	8.9	9.3	9.3	7.2	-9.9	3.1	24	23	21
18:25	7.9	8.2	8.5	8.7	8.9	9.2	8.7	6.7	-9.9	2.6	23	23	20
18:35	8.1	8.3	8.5	8.7	8.9	9.2	9.8	6.7	-9.9	3.1	24	23	22
18:45	8.2	8.3	8.5	8.8	8.9	9.3	10.3	7.7	-9.9	3.6	24	22	21
18:55	8.2	8.4	8.6	8.8	9.0	9.3	10.8	8.7	-9.9	4.1	24	22	21
19:05	8.1	8.3	8.6	8.8	9.0	9.3	11.3	8.7	-9.9	4.1	23	22	21
19:15	8.0	8.3	8.6	8.8	9.0	9.4	11.3	8.7	-9.9	4.1	23	22	21
19:25	8.0	8.3	8.6	8.9	9.1	9.4	10.8	8.7	-9.9	4.1	23	22	21
19:35	8.0	8.3	8.6	8.8	9.1	9.4	10.8	8.7	-9.9	4.1	23	23	21
19:45	7.9	8.2	8.5	8.8	9.0	9.4	10.8	8.7	-9.9	4.6	24	23	21
19:55	7.9	8.1	8.4	8.7	9.0	9.3	11.3	8.7	-9.9	4.1	24	23	23
20:05	7.8	8.1	8.4	8.7	8.9	9.2	10.8	8.7	-9.9	4.1	23	23	21
20:15	7.8	8.0	8.3	8.6	8.8	9.2	11.3	9.3	-9.9	4.1	24	23	22
20:25	7.8	8.1	8.4	8.7	8.9	9.2	11.3	9.3	-9.9	4.1	24	23	23
20:35	7.8	8.1	8.5	8.7	8.9	9.3	11.3	9.3	-9.9	4.1	25	24	23
20:45	7.9	8.2	8.5	8.8	9.0	9.4	11.3	9.3	-9.9	4.6	25	25	24
20:55	8.0	8.3	8.6	8.8	9.0	9.4	11.3	9.3	-9.9	5.1	25	24	23
21:05	8.1	8.4	8.6	8.9	9.1	9.4	11.3	8.7	-9.9	5.1	25	25	24
21:15	8.1	8.3	8.6	8.9	9.1	9.4	11.3	8.7	-9.9	4.6	25	25	23
21:25	8.2	8.5	8.7	9.0	9.2	9.4	11.3	8.7	-9.9	4.6	25	24	24
21:35	8.2	8.5	8.7	9.0	9.1	9.4	10.8	8.2	-9.9	4.6	25	25	23
21:45	8.3	8.5	8.7	8.9	9.1	9.4	10.8	8.2	-9.9	4.6	25	25	24
21:55	8.3	8.5	8.7	8.9	9.1	9.4	10.8	8.2	-9.9	4.1	25	24	23
22:05	8.3	8.6	8.8	8.9	9.1	9.4	10.8	8.7	-9.9	3.6	25	24	23
22:15	8.2	8.5	8.8	9.0	9.2	9.6	10.8	8.2	-9.9	4.1	25	24	24
22:25	8.3	8.5	8.8	9.0	9.2	9.6	10.8	8.2	-9.9	4.6	25	24	24
22:35	8.2	8.4	8.7	9.0	9.2	9.6	10.8	8.2	-9.9	4.1	25	24	23
22:45	8.3	8.6	8.9	9.1	9.2	9.6	10.8	8.2	-9.9	3.6	25	24	22
22:55	8.3	8.5	8.8	9.1	9.3	9.7	10.3	7.7	-9.9	3.6	25	24	23
23:05	8.3	8.6	8.9	9.1	9.3	9.6	10.3	7.7	-9.9	3.1	25	24	22
23:15	8.4	8.7	9.0	9.2	9.4	9.8	10.8	8.2	-9.9	4.6	25	24	23
23:25	8.4	8.7	9.0	9.3	9.5	9.9	10.8	8.7	-9.9	5.1	26	25	24
23:35	8.4	8.7	9.0	9.3	9.5	9.9	10.3	8.2	-9.9	4.6	26	25	25
23:45	8.5	8.7	9.0	9.3	9.4	9.7	9.8	8.2	-9.9	3.6	25	24	22
23:55	8.5	8.7	9.0	9.2	9.4	9.7	9.8	8.2	-9.9	3.6	25	24	22

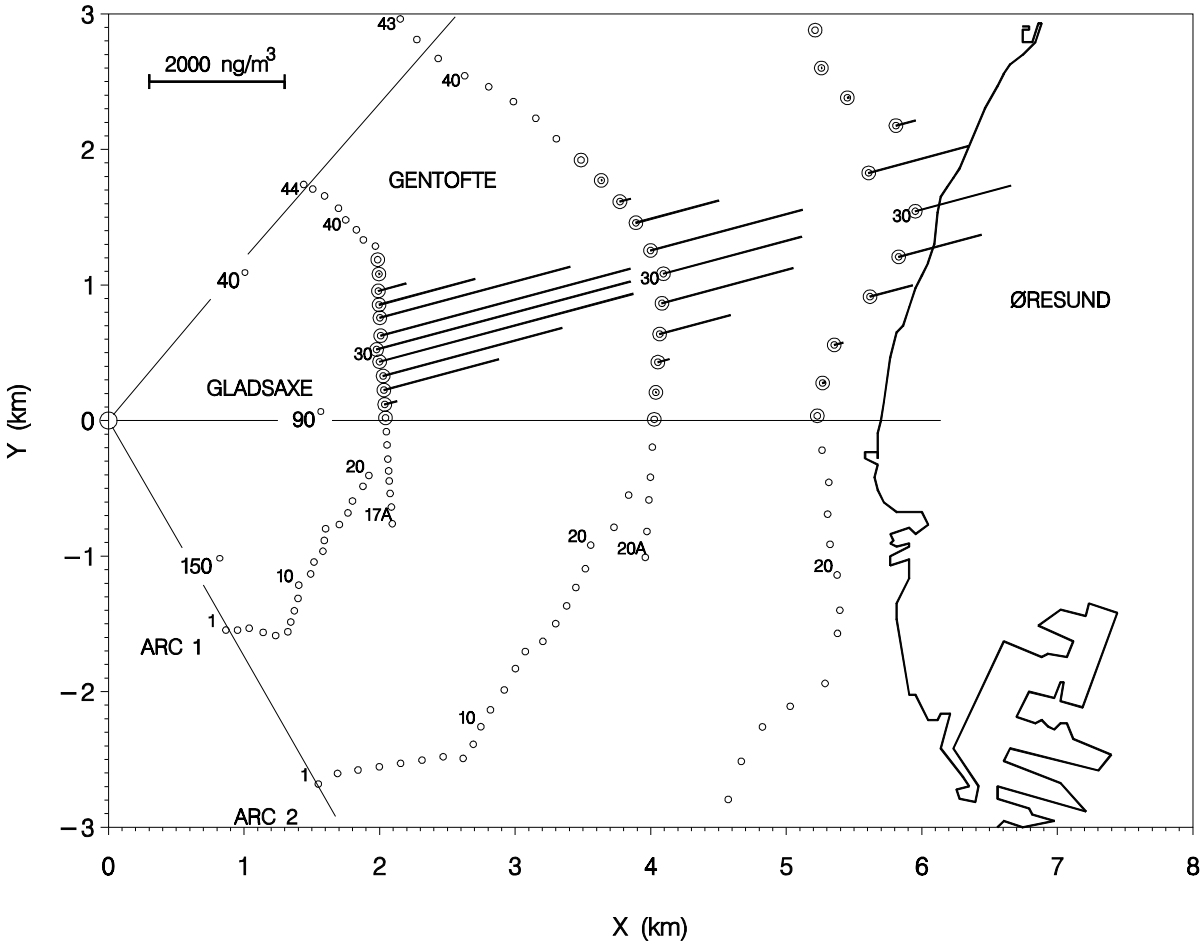

Figure 7. Experiment on November 9, 1978. The bars indicate the mean measured tracer concentrations for the period 13:30-14:30 (run 1-3, Table 20-22), for the individual measuring positions.

Table 20. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on November 9, 1978; Arc 1

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run 1	run 2	run 3	run 1-3	
25	0	0	0	0	
					97
26	0	471	84	185	
					104
27	31	4444	784	1753	
					102
28	530	5926	1743	2733	
					108
29	1007	7669	2928	3868	
					93
30	1987	6274	3364	3875	
					91
31	2893	2196	6344	3811	
					129
32	5891	349	2475	2905	
					94
33	4043	28	314	1462	
					100
34	1220	0	42	421	
					120
35	49	0	0	16	
					105
36	0	0	0	0	
sampling period	13:30-13:50	13:50-14:10	14:10-14:30	13:30-14:30	

Direction of the plume centreline: 255 degrees
Plume centre position (x,y) = (1980, 530)

Table 21. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on November 9, 1978; Arc 2

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
25	0	0	0	0	
					189
26	0	18	0	6	
					212
27	0	416	100	172	
					197
28	0	2258	978	1079	
					215
29	97	3369	2544	2003	
					208
30	627	2491	3207	2108	
					191
31	3799	1200	1953	2317	
					225
32	3028	376	386	1263	
					181
33	401	36	43	160	
					187
34	29	0	0	10	
					183
35	0	0	0	0	
sampling period	13:30-13:50	13:50-14:10	14:10-14:30	13:30-14:30	

Direction of the plume centreline: 255 degrees
Plume centre position (x,y) = (4088, 1093)

Table 22. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on November 9, 1978; Arc 3

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
25	0	0	0	0	
					225
26	0	-	0	41	
					251
27	0	283	120	134	
					279
28	0	1149	790	646	
					232
29	333	1305	2147	1262	
					295
30	1377	-	1604	1457	
					360
31	2718	1486	355	1520	
					288
32	609	209	64	294	
					288
33	54	18	0	24	
					261
34	-	0	0	9	
					282
35	0	-	0	0	
sampling period	13:30-13:50	13:50-14:10	14:10-14:30	13:30-14:30	

Direction of the plume centreline: 256 degrees
Plume centre position (x,y) = (5947, 1531)

Table 23. Meteorological measurements along the tower at the point of release. Time indications are in GMT+1.

Experiment on November 9, 1978

Time	Temperature (deg Celcius) height						Wind-speed (m/s) height				Wind-direction (deg/10) height		
	200 (m)	160 (m)	120 (m)	80 (m)	40 (m)	2 (m)	200 (m)	120 (m)	60 (m)	10 (m)	200 (m)	120 (m)	10 (m)
0:05	6.0	6.1	6.4	6.4	6.6	7.0	7.2	5.7	-9.9	2.6	26	24	22
0:15	5.9	5.9	6.3	6.4	6.7	7.1	7.2	6.2	-9.9	2.6	26	24	23
0:25	6.1	6.1	6.4	6.5	6.7	7.2	7.7	5.7	-9.9	2.6	27	25	23
0:35	5.9	6.0	6.4	6.5	6.7	7.2	7.7	5.7	-9.9	2.6	28	25	23
0:45	6.0	6.1	6.4	6.4	6.7	7.2	7.7	5.7	-9.9	3.1	28	26	24
0:55	6.0	6.1	6.4	6.5	6.7	7.2	7.7	6.2	-9.9	3.1	28	26	24
1:05	6.0	6.1	6.4	6.6	6.7	7.2	7.7	6.2	-9.9	3.1	27	26	23
1:15	6.0	6.2	6.4	6.6	6.8	7.3	7.7	5.7	-9.9	3.1	28	27	25
1:25	6.1	6.3	6.5	6.7	6.8	7.3	7.2	5.1	-9.9	2.6	28	27	24
1:35	6.3	6.5	6.7	6.8	7.0	7.4	7.2	5.7	-9.9	2.6	28	27	25
1:45	6.3	6.5	6.7	6.9	7.1	7.5	7.2	5.7	-9.9	2.1	28	27	25
1:55	6.6	6.5	6.7	7.0	7.1	7.5	6.7	5.1	-9.9	2.1	28	27	24
2:05	6.5	6.5	6.8	7.0	7.1	7.5	6.7	5.1	-9.9	2.1	28	26	25
2:15	6.7	6.7	6.8	7.0	7.1	7.5	6.2	4.1	-9.9	2.1	28	26	25
2:25	6.6	6.6	6.8	7.0	7.1	7.5	6.2	3.6	-9.9	2.1	27	26	24
2:35	6.8	6.8	6.8	7.0	7.1	7.5	6.2	3.6	-9.9	2.1	27	25	24
2:45	7.4	7.0	7.0	7.0	7.1	7.4	6.7	3.6	-9.9	1.5	27	25	20
2:55	7.1	7.0	7.1	7.0	7.0	7.4	6.7	3.6	-9.9	1.5	26	25	21
3:05	7.3	7.2	7.1	7.0	7.1	7.4	6.7	4.1	-9.9	1.5	26	24	19
3:15	7.6	7.3	7.2	7.2	7.2	7.5	7.2	4.1	-9.9	2.1	26	24	20
3:25	7.6	7.5	7.1	7.1	7.2	7.6	7.2	4.6	-9.9	2.1	26	23	20
3:35	7.5	7.2	7.1	7.2	7.3	7.7	7.2	4.6	-9.9	2.1	27	24	22
3:45	7.8	7.5	7.5	7.4	7.4	7.8	7.2	5.1	-9.9	2.1	27	25	21
3:55	8.3	7.8	7.5	7.4	7.5	7.8	7.2	5.1	-9.9	1.5	27	24	20
4:05	8.0	7.7	7.6	7.5	7.6	7.9	7.2	5.1	-9.9	2.1	27	24	20
4:15	8.6	7.9	7.7	7.7	7.7	8.0	7.7	5.7	-9.9	2.6	26	23	20
4:25	8.9	7.9	7.5	7.6	7.7	8.1	8.2	6.2	-9.9	3.1	27	24	21
4:35	8.5	7.9	7.6	7.7	7.8	8.1	8.2	6.2	-9.9	2.6	27	24	22
4:45	8.4	8.1	7.8	7.8	7.8	8.2	8.7	6.2	-9.9	2.6	27	24	20
4:55	8.7	8.1	7.7	7.8	7.9	8.3	8.7	6.2	-9.9	2.6	27	24	23
5:05	8.8	8.1	7.9	7.9	8.0	8.3	8.7	6.2	-9.9	2.6	27	24	22
5:15	9.3	8.4	8.0	8.0	8.1	8.4	8.7	6.2	-9.9	2.6	27	24	20
5:25	8.4	8.0	8.1	8.2	8.1	8.4	8.7	5.7	-9.9	2.6	26	24	21
5:35	8.3	8.0	8.0	8.1	8.2	8.5	8.7	6.2	-9.9	2.6	26	24	21
5:45	8.1	8.0	8.2	8.2	8.2	8.5	8.7	5.7	-9.9	2.1	26	24	22
5:55	8.2	8.3	8.3	8.3	8.4	8.7	8.7	6.2	-9.9	2.1	26	24	22
6:05	8.1	8.2	8.4	8.5	8.5	8.8	8.2	6.2	-9.9	2.1	26	25	23
6:15	8.1	8.3	8.5	8.6	8.7	9.1	7.7	6.2	-9.9	2.6	26	25	24
6:25	8.3	8.4	8.7	8.7	8.8	9.2	7.7	5.7	-9.9	2.6	27	26	23
6:35	8.6	8.6	8.8	8.9	9.0	9.3	8.2	6.2	-9.9	3.1	27	26	24
6:45	8.6	8.6	8.8	8.9	9.1	9.4	7.7	5.7	-9.9	3.1	27	26	23
6:55	8.8	8.8	9.0	9.0	9.1	9.4	7.7	5.7	-9.9	3.1	27	26	24
7:05	8.7	8.8	9.0	9.1	9.2	9.5	7.7	5.1	-9.9	2.6	27	26	25
7:15	8.5	8.7	9.0	9.1	9.2	9.6	7.7	5.7	-9.9	3.1	27	26	23
7:25	8.6	8.8	9.0	9.2	9.3	9.7	7.7	6.2	-9.9	3.1	27	27	25
7:35	9.1	9.1	9.3	9.3	9.3	9.7	8.7	6.2	-9.9	2.6	28	26	24
7:45	8.7	8.9	9.1	9.3	9.4	9.7	8.7	6.7	-9.9	2.6	27	26	23

7:55	8.7	8.9	9.1	9.2	9.4	9.8	8.2	6.2	-9.9	3.1	28	26	24
8:05	9.0	9.1	9.2	9.3	9.4	9.8	8.2	5.7	-9.9	3.1	27	26	24
8:15	8.8	9.0	9.2	9.3	9.4	9.8	8.2	6.2	-9.9	3.1	27	26	25
8:25	8.9	9.0	9.2	9.4	9.5	9.8	8.2	5.7	-9.9	3.1	27	26	24
8:35	9.0	9.1	9.3	9.4	9.5	9.9	8.7	6.7	-9.9	3.1	27	26	24
8:45	8.9	9.1	9.3	9.5	9.6	10.0	8.7	7.2	-9.9	3.6	27	26	23
8:55	9.0	9.2	9.4	9.5	9.7	10.1	8.7	6.7	-9.9	3.6	27	26	25
9:05	9.0	9.2	9.4	9.6	9.7	10.2	8.7	6.7	-9.9	3.1	27	26	25
9:15	9.0	9.2	9.4	9.6	9.7	10.2	8.2	6.2	-9.9	3.1	27	26	24
9:25	9.1	9.2	9.4	9.6	9.7	10.2	8.2	6.2	-9.9	3.6	27	25	23
9:35	9.0	9.2	9.4	9.6	9.7	10.3	7.7	5.7	-9.9	3.6	26	25	24
9:45	9.0	9.2	9.5	9.7	9.8	10.4	7.7	5.7	-9.9	3.6	27	26	24
9:55	9.1	9.3	9.6	9.7	9.9	10.5	7.7	5.7	-9.9	3.1	28	26	25
10:05	9.1	9.3	9.6	9.8	10.1	10.6	8.2	6.7	-9.9	3.1	28	27	26
10:15	9.1	9.3	9.7	9.9	10.3	10.6	7.7	6.2	-9.9	3.6	28	27	26
10:25	9.1	9.4	9.8	10.1	10.5	10.8	7.7	6.2	-9.9	3.1	28	27	25
10:35	9.1	9.4	9.9	10.2	10.6	11.0	7.7	6.2	-9.9	2.6	28	27	25
10:45	9.2	9.5	10.0	10.3	10.8	11.1	7.7	6.2	-9.9	3.1	28	27	26
10:55	9.3	9.5	10.0	10.4	10.7	11.1	7.7	6.2	-9.9	3.1	27	27	26
11:05	9.3	9.6	10.1	10.4	10.8	11.2	7.7	6.7	-9.9	3.6	27	26	24
11:15	9.4	9.6	10.1	10.5	10.9	11.2	8.2	6.2	-9.9	3.1	27	26	25
11:25	9.5	9.7	10.2	10.6	11.0	11.4	8.2	6.2	-9.9	3.1	27	26	24
11:35	9.6	9.9	10.4	10.9	11.1	11.7	8.2	6.2	-9.9	3.6	26	26	23
11:45	9.7	10.1	10.6	11.0	11.3	12.1	8.7	6.7	-9.9	3.6	26	26	25
11:55	9.8	10.2	10.7	11.0	11.4	12.1	9.3	7.2	-9.9	4.1	27	26	25
12:05	9.9	10.3	10.7	11.1	11.5	12.2	9.3	7.2	-9.9	4.1	27	26	24
12:15	10.0	10.4	10.8	11.2	11.5	12.4	8.7	7.2	-9.9	3.6	27	27	26
12:25	10.1	10.5	10.9	11.2	11.6	12.3	8.2	6.7	-9.9	3.6	27	26	25
12:35	10.1	10.5	10.9	11.2	11.6	12.2	8.2	6.7	-9.9	4.1	27	26	24
12:45	10.1	10.5	10.9	11.3	11.6	12.4	8.7	7.2	-9.9	4.1	27	26	25
12:55	10.1	10.5	10.9	11.3	11.8	12.6	8.7	7.7	-9.9	3.6	28	27	25
13:05	10.3	10.6	11.0	11.4	11.8	12.6	8.2	6.7	-9.9	3.6	27	27	26
13:15	10.2	10.6	11.0	11.3	11.7	12.4	7.7	6.7	-9.9	3.1	27	26	26
13:25	10.3	10.7	11.0	11.3	11.7	12.3	7.7	5.7	-9.9	3.1	27	26	24
13:35	10.3	10.7	11.1	11.4	11.8	12.4	7.2	5.7	-9.9	3.1	27	27	25
13:45	10.3	10.7	11.0	11.4	11.8	12.4	7.2	5.7	-9.9	3.1	28	27	27
13:55	10.2	10.6	11.0	11.4	11.8	12.3	7.7	6.2	-9.9	3.1	28	27	25
14:05	10.2	10.6	11.0	11.3	11.7	12.3	7.2	5.7	-9.9	3.1	27	27	25
14:15	10.2	10.6	11.0	11.3	11.7	12.3	7.2	6.2	-9.9	3.6	27	27	25
14:25	10.2	10.6	11.0	11.4	11.7	12.3	7.7	6.2	-9.9	3.1	27	26	25
14:35	10.3	10.6	11.0	11.3	11.7	12.2	7.7	6.2	-9.9	3.1	27	26	25
14:45	10.3	10.6	11.0	11.3	11.7	12.2	8.2	6.7	-9.9	3.1	27	26	25
14:55	10.2	10.6	10.9	11.3	11.6	12.1	8.2	6.7	-9.9	3.1	27	26	25
15:05	10.2	10.6	10.9	11.3	11.6	12.1	8.2	6.7	-9.9	3.1	27	26	26
15:15	10.2	10.6	10.9	11.3	11.6	12.0	8.2	6.7	-9.9	3.1	27	26	25
15:25	10.2	10.6	10.9	11.3	11.6	12.0	8.2	6.7	-9.9	3.1	27	26	24
15:35	10.1	10.5	10.9	11.2	11.5	11.9	8.2	6.2	-9.9	2.6	27	26	25
15:45	10.1	10.5	10.8	11.2	11.5	11.9	7.7	6.2	-9.9	3.1	27	26	24
15:55	10.1	10.4	10.8	11.1	11.4	11.8	7.7	6.2	-9.9	3.1	27	26	25
16:05	10.0	10.4	10.7	11.1	11.4	11.8	7.7	6.2	-9.9	3.1	27	26	24
16:15	10.0	10.4	10.7	11.1	11.3	11.7	7.7	6.2	-9.9	3.1	27	26	24
16:25	10.0	10.4	10.7	11.1	11.3	11.7	7.7	6.2	-9.9	3.1	27	26	24
16:35	9.9	10.3	10.7	11.0	11.3	11.7	7.7	5.7	-9.9	2.6	27	26	24
16:45	9.9	10.3	10.6	11.0	11.2	11.6	7.7	6.2	-9.9	2.6	27	26	24
16:55	9.9	10.2	10.6	10.9	11.2	11.6	7.7	5.7	-9.9	2.6	27	26	23
17:05	10.0	10.3	10.6	10.9	11.2	11.5	7.7	6.2	-9.9	3.1	27	25	23
17:15	10.0	10.3	10.6	10.9	11.2	11.5	7.7	6.2	-9.9	3.1	26	24	22
17:25	10.1	10.4	10.6	10.9	11.2	11.5	7.7	6.2	-9.9	3.1	26	24	24
17:35	10.0	10.3	10.6	10.9	11.2	11.5	7.7	6.2	-9.9	2.6	25	24	22

17:45	9.7	10.0	10.4	10.7	11.0	11.4	7.2	5.7	-9.9	2.6	25	24	21
17:55	9.9	10.1	10.3	10.6	10.9	11.2	7.2	5.1	-9.9	2.6	26	25	23
18:05	9.6	10.0	10.3	10.6	10.8	11.2	7.2	6.2	-9.9	3.1	26	25	24
18:15	9.9	10.2	10.4	10.6	10.8	11.1	8.2	6.2	-9.9	3.1	26	25	23
18:25	9.7	10.0	10.3	10.6	10.8	11.2	8.2	6.7	-9.9	2.6	26	25	22
18:35	9.8	10.1	10.3	10.6	10.7	11.1	8.2	6.2	-9.9	3.1	26	25	22
18:45	9.7	10.0	10.3	10.5	10.7	11.0	7.7	6.2	-9.9	3.1	25	25	22
18:55	9.5	9.8	10.2	10.5	10.7	11.1	7.2	5.7	-9.9	3.1	26	25	24
19:05	9.8	10.0	10.2	10.5	10.7	11.0	7.2	5.7	-9.9	3.1	26	25	23
19:15	9.5	9.7	10.1	10.3	10.6	11.0	7.2	5.7	-9.9	3.1	25	24	23
19:25	9.4	9.7	10.0	10.3	10.5	10.9	7.2	5.7	-9.9	2.6	26	24	23
19:35	9.6	9.7	10.0	10.3	10.5	10.9	7.2	5.7	-9.9	2.6	26	25	23
19:45	10.0	10.0	10.1	10.3	10.5	10.9	7.2	5.7	-9.9	2.6	27	24	23
19:55	9.3	9.6	9.9	10.2	10.4	10.9	7.2	5.7	-9.9	2.6	25	24	22
20:05	9.1	9.5	9.8	10.1	10.4	10.8	7.7	6.2	-9.9	2.6	26	24	22
20:15	9.2	9.5	9.8	10.2	10.4	10.8	8.2	6.7	-9.9	3.1	26	25	24
20:25	9.3	9.6	10.0	10.3	10.5	10.8	8.2	7.2	-9.9	3.6	27	25	24
20:35	9.1	9.5	9.9	10.2	10.4	10.7	8.2	6.7	-9.9	3.1	27	26	24
20:45	9.1	9.5	9.8	10.2	10.4	10.6	8.2	7.2	-9.9	3.1	27	26	25
20:55	9.3	9.7	9.9	10.2	10.4	10.7	8.7	7.2	-9.9	3.6	27	26	25
21:05	9.3	9.7	10.0	10.3	10.5	10.7	8.7	6.7	-9.9	2.6	28	27	25
21:15	9.4	9.8	10.0	10.3	10.4	10.7	8.2	6.7	-9.9	2.6	28	27	26
21:25	9.5	9.8	10.0	10.2	10.4	10.6	8.7	6.7	-9.9	2.6	28	27	24
21:35	9.6	9.9	10.0	10.2	10.3	10.5	8.7	7.2	-9.9	2.6	28	27	26
21:45	9.5	9.8	9.9	10.1	10.2	10.3	8.7	6.7	-9.9	2.6	28	26	25
21:55	9.4	9.7	9.9	10.0	10.1	10.1	8.7	6.7	-9.9	2.6	27	26	24
22:05	9.0	9.3	9.5	9.7	9.8	10.0	7.7	6.2	-9.9	2.6	25	24	22
22:15	8.5	8.8	9.2	9.5	9.8	10.2	7.7	6.2	-9.9	2.6	25	24	23
22:25	8.5	8.8	9.1	9.3	9.6	10.0	7.7	6.2	-9.9	3.1	26	25	24
22:35	8.6	8.8	9.0	9.3	9.5	9.8	8.2	6.7	-9.9	3.6	26	25	23
22:45	8.5	8.7	8.9	9.2	9.4	9.7	8.7	6.2	-9.9	3.6	26	25	24
22:55	8.4	8.8	8.9	9.1	9.3	9.7	8.7	6.7	-9.9	3.6	26	25	24
23:05	8.4	8.7	8.9	9.1	9.2	9.6	8.7	7.2	-9.9	3.6	26	25	24
23:15	8.5	8.8	9.0	9.1	9.1	9.4	8.7	6.7	-9.9	3.1	26	25	23
23:25	8.8	8.8	8.9	9.0	9.1	9.4	8.7	6.7	-9.9	2.6	26	25	24
23:35	8.7	8.9	8.9	8.9	9.0	9.3	8.7	6.7	-9.9	2.6	26	24	23
23:45	9.2	9.3	9.0	8.9	9.0	9.3	8.7	7.2	-9.9	2.6	26	25	23
23:55	8.9	9.0	9.0	9.0	9.1	9.4	9.3	7.2	-9.9	3.1	26	25	23

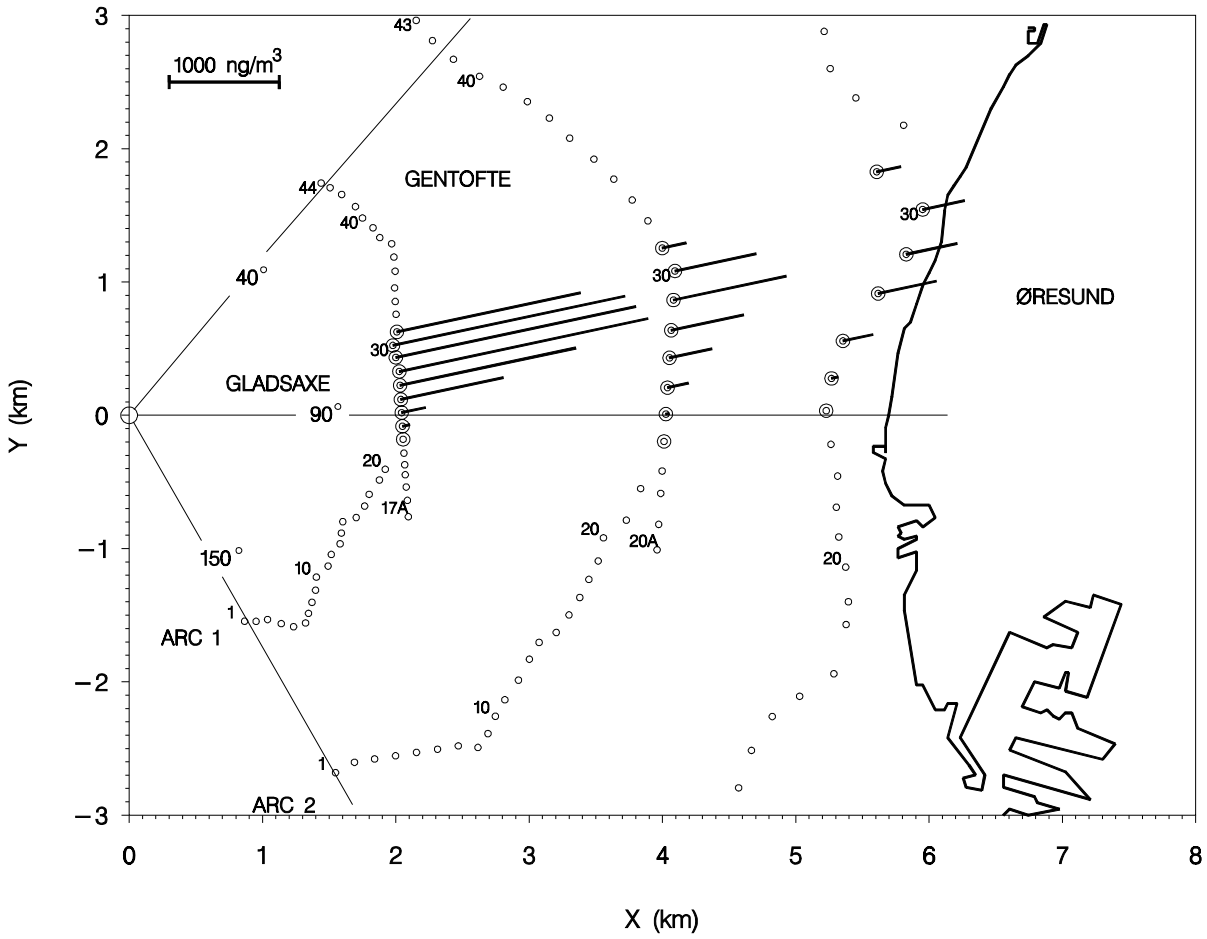

Figure 8. Experiment on April 30, 1979. The bars indicate the mean measured tracer concentrations for the period 13:02-13:42 (run 1-2, Table 24-26), for the individual measuring positions.

Table 24. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration (run 1-2). A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on April 30, 1979; Arc 1

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m$^{3)}$	(ng/m^3)	(m)
	run1	run2	run3	run1-2	
23	0	0	-	0	
					97
24	133	0	-	66	
					101
25	380	62	-	221	
					98
26	954	-	-	949	
					105
27	-	-	-	1629	
					103
28	1803	2810	-	2307	
					108
29	-	-	-	2224	
					93
30	1891	2414	-	2153	
					94
31	1962	1441	-	1701	
sampling period	13:02-13:22	13:22-13:42		13:02-13:42	

Direction of the plume centreline: 258 degrees
Plume centre position (x,y) = (2005, 413)

Table 25. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration (run 1-2). A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on April 30, 1979; Arc 2

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-2	
24	0	0	-	0	
					198
25	61	0	-	30	
					193
26	130	259	-	194	
					216
27	130	656	-	393	
					201
28	320	-	-	671	
					220
29	665	1425	-	1045	
					212
30	475	1028	-	751	
					187
31	242	199	-	220	
sampling period	13:02-13:22	13:22-13:42		13:02 13:42	

Direction of the plume centreline: 259 degrees
Plume centre position (x,y) = (4078, 798)

Table 26. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration (run 1-2). A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on April 30, 1979; Arc 3

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-2	
25	0	0	-	0	
					229
26	0	120	-	60	
					257
27	35	519	-	277	
					294
28	99	978	-	538	
					244
29	212	727	-	470	
					304
30	431	342	-	387	
					348
31	392	53	-	222	
sampling period	13:02-13:22	13:22-13:42		13:02 13:42	

Direction of the plume centreline: 258 degrees
Plume centre position (x,y) = (5835, 1225)

Table 27. Meteorological measurements along the tower at the point of release. Time indications are in GMT+1.

Experiment on April 30, 1979

Time	Temperature (deg Celsius) height						Wind-speed (m/s) height				Wind-direction (deg/10) height		
	200	160	120	80	40	2	200	120	60	10	200	120	10
time	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)
0:02	6.3	6.6	6.9	7.2	7.4	7.7	16.4	13.9	10.8	6.6	22	22	21
0:12	6.3	6.6	6.9	7.2	7.4	7.8	15.9	13.3	10.2	6.1	23	22	22
0:22	6.3	6.7	7.0	7.3	7.5	7.8	15.9	13.9	9.7	6.1	23	22	21
0:32	6.3	6.7	7.0	7.3	7.6	7.9	15.9	14.4	10.8	6.6	23	22	22
0:42	6.3	6.7	7.1	7.4	7.6	7.9	15.9	14.4	11.3	6.1	23	22	22
0:52	6.3	6.8	7.1	7.4	7.6	7.9	15.9	14.4	10.8	6.1	23	22	22
1:02	6.3	6.7	7.0	7.4	7.6	7.9	15.4	13.9	10.8	6.1	23	22	21
1:12	6.3	6.8	7.1	7.4	7.6	7.9	15.9	13.9	10.8	6.1	23	22	21
1:22	6.3	6.7	7.0	7.4	7.6	7.9	14.9	13.3	10.8	6.1	23	22	22
1:32	6.2	6.6	6.9	7.3	7.5	7.8	14.9	12.3	10.2	6.1	23	22	23
1:42	6.2	6.6	6.9	7.3	7.5	7.8	14.9	12.8	9.7	5.6	23	22	21
1:52	6.2	6.6	6.9	7.2	7.4	7.8	14.4	12.8	9.7	6.1	23	22	22
2:02	6.2	6.6	6.9	7.2	7.4	7.8	14.4	12.3	9.7	5.6	23	22	22
2:12	6.2	6.6	6.9	7.2	7.4	7.8	14.9	12.8	9.7	5.6	22	22	21
2:22	6.2	6.6	6.9	7.2	7.5	7.8	14.9	12.8	10.2	6.1	22	21	21
2:32	6.3	6.7	6.9	7.3	7.5	7.9	14.9	12.8	10.2	6.6	22	21	21
2:42	6.4	6.7	7.0	7.4	7.6	8.0	15.4	13.3	10.8	6.6	22	22	22
2:52	6.4	6.8	7.1	7.4	7.7	8.0	15.4	13.9	10.8	6.6	22	22	21
3:02	6.5	6.7	7.1	7.4	7.7	8.0	15.4	13.9	10.8	6.1	23	22	22
3:12	6.5	6.8	7.1	7.4	7.7	8.0	15.9	14.4	10.8	7.2	23	22	21
3:22	6.5	6.7	7.1	7.4	7.7	8.0	15.9	14.9	10.8	6.6	23	22	20
3:32	6.4	6.7	7.0	7.4	7.6	7.9	15.9	14.4	10.8	6.1	23	22	22
3:42	6.5	6.7	7.0	7.4	7.7	8.0	15.4	13.9	10.2	6.6	23	22	21
3:52	6.4	6.7	7.0	7.4	7.6	8.0	15.4	13.9	10.8	6.6	23	22	22
4:02	6.4	6.7	7.0	7.4	7.7	8.0	15.4	13.3	10.2	6.6	23	22	21
4:12	6.4	6.6	7.0	7.4	7.6	8.0	15.4	13.3	10.2	6.6	23	23	21
4:22	6.3	6.6	6.9	7.3	7.6	7.9	15.4	13.3	10.2	6.6	23	22	22
4:32	6.3	6.6	6.9	7.3	7.5	7.8	15.4	13.3	10.2	5.6	23	22	22
4:42	6.2	6.5	6.8	7.2	7.4	7.7	14.9	12.8	10.2	5.6	23	22	23
4:52	6.1	6.4	6.7	7.1	7.3	7.7	14.4	12.8	10.8	6.1	23	22	22
5:02	6.1	6.3	6.7	7.0	7.2	7.6	14.4	12.3	10.2	6.1	23	22	21
5:12	6.0	6.3	6.7	7.0	7.2	7.6	13.9	12.3	9.7	5.6	23	22	23
5:22	6.0	6.3	6.7	7.0	7.2	7.6	13.9	12.3	10.2	6.1	23	22	21
5:32	6.0	6.2	6.6	6.9	7.1	7.5	13.9	12.3	9.7	5.6	23	22	22
5:42	6.0	6.3	6.7	7.0	7.2	7.5	14.4	12.3	9.7	6.1	23	22	22
5:52	5.9	6.3	6.6	7.0	7.2	7.6	13.9	11.8	9.2	5.6	23	23	23
6:02	6.0	6.3	6.6	7.0	7.2	7.6	13.9	12.3	9.2	5.6	22	21	21
6:12	6.1	6.4	6.7	7.1	7.3	7.6	14.4	12.3	9.7	5.6	23	22	23
6:22	6.0	6.3	6.7	7.0	7.3	7.7	14.4	11.8	9.7	6.6	23	23	22
6:32	6.1	6.4	6.7	7.1	7.3	7.7	14.4	12.3	10.2	6.6	23	23	22
6:42	6.0	6.3	6.7	7.0	7.3	7.7	14.4	12.8	10.8	7.7	24	23	23
6:52	6.1	6.4	6.7	7.1	7.4	7.7	13.9	11.8	10.2	7.2	24	23	23
7:02	6.1	6.4	6.8	7.1	7.4	7.8	14.4	12.3	10.8	6.6	24	24	23
7:12	6.2	6.5	6.9	7.3	7.5	8.0	14.4	12.8	11.8	7.2	25	24	24
7:22	6.0	6.4	6.8	7.2	7.5	7.9	14.9	13.3	12.8	8.7	25	24	23
7:32	6.0	6.3	6.7	7.1	7.4	7.8	14.4	13.3	12.3	7.7	25	24	23
7:42	5.6	6.0	6.4	6.8	7.0	7.5	15.4	13.9	12.3	7.7	25	24	24

7:52	5.3	5.6	5.9	6.3	6.5	6.7	15.4	14.9	12.8	7.2	26	26	25
8:02	5.0	5.4	5.8	6.1	6.4	6.8	15.9	14.9	13.3	7.2	27	26	25
8:12	4.9	5.3	5.6	6.0	6.3	6.8	14.4	12.8	11.8	6.1	27	26	26
8:22	4.7	5.1	5.5	6.0	6.3	7.1	14.4	13.3	11.8	6.1	27	26	26
8:32	4.5	4.9	5.3	5.7	6.0	6.6	13.3	12.3	11.3	6.6	26	25	25
8:42	4.3	4.7	5.0	5.4	5.7	6.2	15.4	14.4	12.3	6.6	27	26	28
8:52	4.1	4.5	4.9	5.4	5.8	6.7	14.9	14.4	12.3	7.2	28	27	26
9:02	2.8	3.2	3.6	4.0	4.4	5.5	14.9	14.9	13.9	7.7	29	29	29
9:12	2.6	3.0	3.5	3.9	4.2	5.1	14.4	13.3	12.8	7.7	29	29	29
9:22	2.8	3.1	3.6	4.0	4.4	5.6	13.3	12.3	12.3	7.2	30	29	28
9:32	3.1	3.4	3.9	4.3	4.9	6.6	12.3	12.3	12.8	6.6	29	29	28
9:42	3.3	3.7	4.2	4.6	5.1	6.8	12.8	12.8	13.3	7.7	30	29	29
9:52	3.2	3.6	4.0	4.4	4.9	6.5	13.9	13.3	14.4	8.2	29	28	28
10:02	3.3	3.7	4.2	4.7	5.1	6.5	13.9	13.3	13.9	8.2	29	29	28
10:12	3.6	4.0	4.5	5.0	5.5	7.1	14.4	13.3	13.3	7.7	28	27	27
10:22	3.6	4.0	4.5	4.9	5.6	8.1	14.9	13.9	13.9	7.7	29	28	27
10:32	3.8	4.2	4.7	5.3	5.7	7.8	14.9	13.9	13.9	7.7	28	27	28
10:42	4.3	4.7	5.2	5.7	6.3	8.0	15.4	14.4	13.9	7.7	27	27	26
10:52	4.1	4.5	5.0	5.4	5.9	7.9	15.9	14.9	14.4	8.2	28	28	27
11:02	4.0	4.5	4.9	5.5	6.1	7.7	14.9	14.9	14.4	8.2	27	27	26
11:12	4.1	4.5	4.9	5.4	6.1	8.2	14.9	14.4	13.9	8.2	27	27	26
11:22	4.1	4.5	5.0	5.5	6.1	8.3	14.4	14.9	14.9	8.7	28	27	27
11:32	4.2	4.6	5.2	5.7	6.2	8.3	14.4	14.4	13.9	8.7	27	27	27
11:42	4.4	4.8	5.2	5.7	6.4	8.6	14.9	14.4	13.9	8.2	28	27	27
11:52	4.4	4.8	5.3	6.1	6.6	8.4	14.9	14.9	14.4	8.2	27	26	26
12:02	4.4	4.8	5.2	5.7	6.4	8.2	14.9	14.9	14.4	8.7	26	26	26
12:12	4.7	5.1	5.5	6.0	6.7	7.7	13.9	13.9	12.8	8.2	26	26	25
12:22	4.6	5.1	5.8	6.3	6.8	8.4	14.4	13.9	12.8	7.7	27	26	26
12:32	5.0	5.4	5.9	6.4	6.9	8.6	14.4	13.9	13.3	7.7	27	27	26
12:42	5.2	5.7	6.2	6.8	7.2	9.5	14.9	13.9	13.3	8.2	28	27	27
12:52	5.5	6.0	6.3	6.9	7.5	9.4	13.3	12.8	11.8	7.7	26	25	25
13:02	5.1	5.5	6.0	6.5	7.1	8.5	13.3	13.3	12.3	7.7	25	24	24
13:12	4.9	5.4	5.8	6.2	6.7	8.5	14.4	13.9	12.8	8.2	26	25	25
13:22	2.8	3.2	3.5	4.1	4.8	6.9	15.9	15.4	14.4	9.2	26	26	26
13:32	3.4	3.3	3.6	4.0	4.4	5.2	16.4	15.9	14.4	8.7	26	26	26
13:42	3.6	3.9	4.3	4.7	5.3	6.6	14.9	12.8	10.8	6.1	25	25	24
13:52	4.5	5.0	5.5	6.2	6.7	8.6	12.3	10.8	9.2	5.6	25	24	24
14:02	3.4	3.7	4.0	4.5	5.0	6.2	12.8	10.8	10.2	6.1	25	24	23
14:12	3.0	3.4	3.8	4.3	4.7	6.5	14.9	13.3	12.3	7.2	27	27	27
14:22	3.7	3.9	4.1	4.5	5.0	6.4	15.4	14.9	13.9	7.2	26	26	25
14:32	4.4	4.9	5.3	5.9	6.5	8.1	14.4	13.3	11.8	6.1	26	25	24
14:42	4.3	4.7	5.1	5.6	6.1	7.0	13.3	12.8	11.8	7.2	26	26	24
14:52	4.2	4.7	5.1	5.5	5.9	6.9	12.3	12.3	11.3	7.2	25	25	26
15:02	4.0	4.4	4.8	5.3	5.9	6.9	11.8	11.3	10.2	6.1	24	24	23
15:12	3.7	4.1	4.5	4.9	5.3	6.2	11.3	11.3	9.7	6.1	24	23	22
15:22	4.1	4.5	4.9	5.3	5.6	6.3	11.8	11.3	10.8	7.2	25	24	24
15:32	3.2	3.4	3.6	3.9	4.2	4.9	12.8	12.3	10.8	7.2	25	24	24
15:42	2.1	2.4	2.8	3.1	3.5	4.1	13.9	12.8	10.8	7.2	25	24	24
15:52	2.7	3.0	3.5	3.9	4.2	5.2	12.8	11.3	9.7	6.6	23	22	24
16:02	3.4	3.9	4.3	4.6	5.0	6.1	12.3	10.2	9.2	5.6	24	22	22
16:12	3.7	4.1	4.5	4.9	5.2	6.0	11.3	9.7	8.7	5.6	23	24	24
16:22	3.6	3.8	4.2	4.6	5.0	5.7	10.2	8.7	7.7	5.1	23	23	23
16:32	2.6	3.0	3.3	3.6	3.9	4.3	11.3	10.2	8.7	6.1	25	24	23
16:42	2.6	3.0	3.4	3.7	4.1	4.6	10.2	9.2	7.7	5.1	25	25	25
16:52	3.1	3.4	3.7	4.0	4.4	4.9	9.2	7.7	6.1	3.6	25	24	25
17:02	2.2	2.6	3.0	3.2	3.4	4.3	10.2	8.7	7.7	5.1	26	25	26
17:12	1.1	1.4	1.7	2.0	2.3	2.9	13.9	11.8	10.8	6.1	31	30	29
17:22	1.1	1.6	2.1	2.5	2.8	3.4	12.8	11.8	10.2	5.1	31	30	30
17:32	2.1	2.2	2.6	3.1	3.4	4.2	12.8	11.3	10.2	4.6	31	30	28

17:42	2.4	2.7	3.0	3.5	3.9	4.7	12.8	10.8	9.2	4.6	29	29	28
17:52	2.6	3.0	3.4	3.9	4.2	4.7	12.8	11.3	10.2	5.6	28	27	28
18:02	2.7	3.2	3.6	4.0	4.3	4.8	12.8	11.3	10.8	5.6	28	27	27
18:12	3.3	3.6	4.0	4.3	4.5	5.0	14.9	12.8	11.8	6.6	28	27	26
18:22	3.5	3.9	4.3	4.6	4.9	5.3	14.9	12.8	11.3	6.1	29	28	27
18:32	3.9	4.2	4.5	4.9	5.1	5.4	15.4	13.3	12.8	7.2	28	28	28
18:42	2.9	3.3	3.8	4.2	4.5	4.9	16.4	15.9	15.4	8.2	29	28	27
18:52	4.2	4.6	4.9	5.3	5.5	5.4	16.4	14.4	13.3	7.2	28	27	28
19:02	4.2	4.5	4.9	5.3	5.5	5.7	17.5	15.4	14.4	7.2	28	28	28
19:12	4.3	4.7	5.1	5.4	5.6	5.9	16.4	14.9	14.9	8.2	28	27	27
19:22	4.3	4.7	5.1	5.4	5.6	5.9	16.9	15.4	14.4	7.7	28	27	26
19:32	4.2	4.6	5.0	5.3	5.5	5.8	16.9	14.9	13.9	7.7	28	27	27
19:42	4.3	4.6	5.0	5.3	5.6	5.9	16.9	14.9	13.9	7.7	28	27	27
19:52	4.3	4.7	5.0	5.4	5.6	6.0	17.5	15.4	13.9	7.7	28	27	27
20:02	4.3	4.7	5.1	5.4	5.7	6.0	17.5	15.9	14.4	8.2	28	27	26
20:12	4.3	4.6	5.0	5.4	5.6	6.0	17.5	15.4	14.9	8.7	28	27	27
20:22	4.3	4.7	5.0	5.4	5.6	5.9	17.5	16.4	14.9	8.2	28	27	27
20:32	4.2	4.6	5.0	5.3	5.6	5.9	16.9	15.4	14.9	8.2	28	27	26
20:42	4.3	4.6	5.0	5.3	5.6	5.9	16.9	15.4	14.4	8.2	27	27	26
20:52	4.0	4.4	4.8	5.1	5.4	5.7	16.4	14.9	13.3	7.7	27	27	26
21:02	3.9	4.3	4.6	5.0	5.2	5.5	16.9	15.4	14.4	8.2	28	27	26
21:12	4.0	4.3	4.7	5.1	5.3	5.6	19.0	16.9	15.9	8.7	28	27	26
21:22	3.8	4.2	4.5	4.8	5.0	5.3	18.0	16.9	15.9	8.7	28	27	28
21:32	3.7	4.1	4.4	4.7	5.0	5.4	16.9	15.9	14.4	7.7	28	27	28
21:42	3.6	3.9	4.3	4.7	5.0	5.4	15.9	14.4	12.8	7.2	27	27	26
21:52	3.6	3.9	4.3	4.6	4.9	5.2	15.9	14.9	13.3	7.7	27	26	27
22:02	3.5	3.9	4.2	4.6	4.8	5.2	16.4	14.9	13.3	7.7	27	26	26
22:12	3.5	3.9	4.3	4.6	4.8	5.0	16.4	14.9	13.9	8.2	27	26	26
22:22	3.4	3.8	4.1	4.4	4.7	4.9	15.4	13.9	12.3	7.2	27	26	26
22:32	3.3	3.7	4.1	4.4	4.7	5.0	15.9	14.4	12.8	7.7	27	26	25
22:42	3.1	3.4	3.8	4.2	4.4	4.8	15.9	14.4	12.8	7.2	27	26	26
22:52	3.1	3.5	3.8	4.1	4.4	4.8	16.4	14.4	12.3	7.2	27	26	26
23:02	3.2	3.5	3.9	4.2	4.5	4.8	16.4	14.4	12.8	7.7	27	27	26
23:12	3.2	3.6	4.0	4.3	4.6	4.9	16.4	14.4	13.3	7.2	27	27	26
23:22	3.3	3.6	4.0	4.4	4.6	5.0	15.4	13.9	12.3	7.2	27	26	25
23:32	3.3	3.7	4.0	4.4	4.6	5.0	14.9	13.3	11.8	6.6	27	26	27
23:42	3.3	3.6	4.0	4.4	4.7	5.1	14.9	12.8	11.8	6.6	27	26	26
23:52	3.3	3.7	4.1	4.4	4.7	5.1	14.9	12.8	11.3	6.1	27	26	25

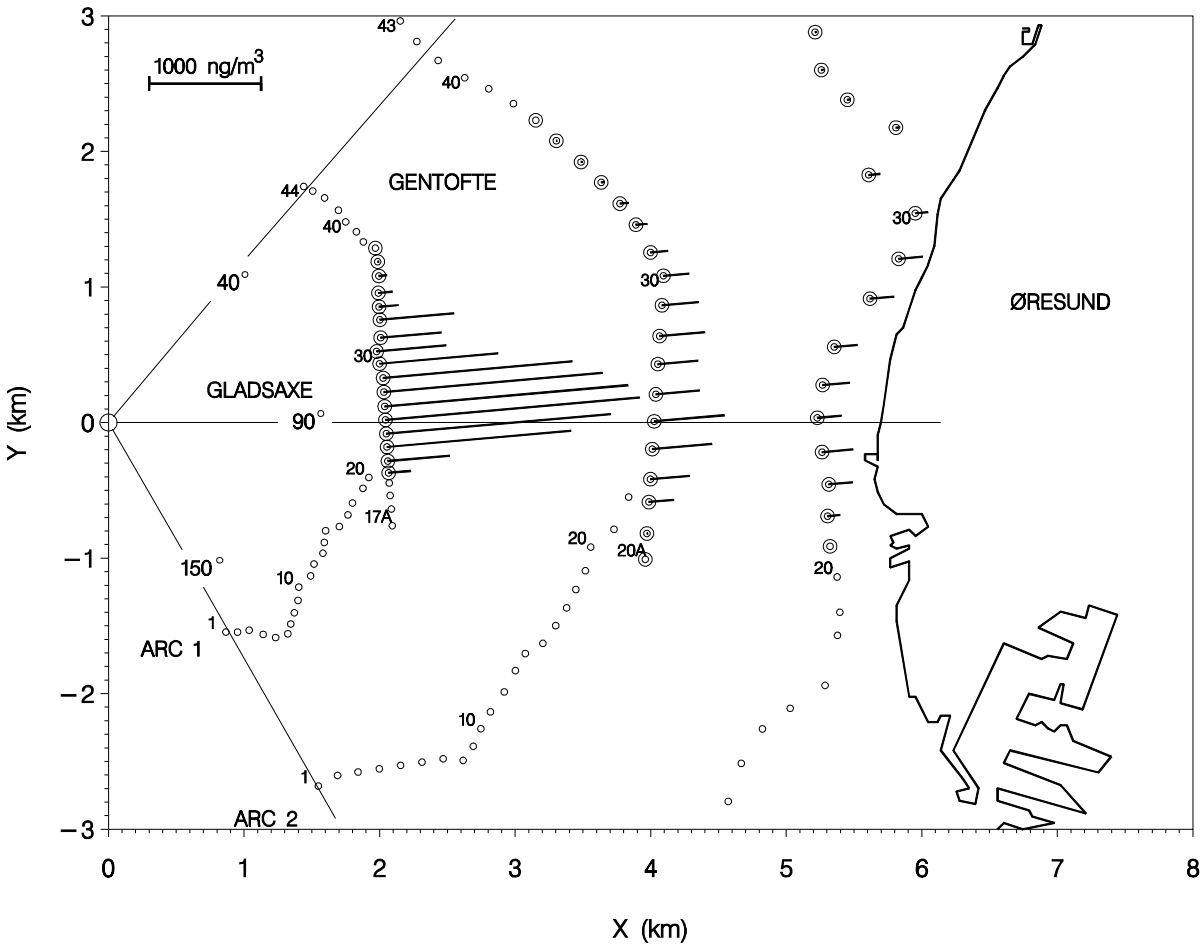

Figure 9. Experiment on June 27, 1979. The bars indicate the mean measured tracer concentrations for the period 12:45-13:45 (run 1-3, Table 28-30), for the individual measuring positions.

Table 28. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on June 27, 1979; Arc 1

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
21	103	485	0	196	
					87
22	440	1216	0	552	
					104
23	1426	3513	0	1646	
					98
24	1253	4767	0	2007	
					102
25	1303	5445	74	2274	
					99
26	707	5548	284	2179	
					106
27	345	3801	1726	1957	
					104
28	312	3000	1767	1693	
					107
29	312	1537	1327	1059	
					91
30	205	522	1138	622	
					99
31	78	230	1319	542	
					132
32	25	131	1829	662	
					96
33	-	140	362	171	
					102
34	-	-	-	123	
					124
35	0	0	210	70	
					106
36	0	0	33	11	
					101
37	0	0	0	0	
sampling period	12.45-13:05	13:05-13:25	13:25-13:45	12:45 13:45	

Direction of the plume centreline: 265 degrees
Plume centre position (x,y) = (2035, 165)

Table 29. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on June 27, 1979; Arc 2

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
20A	0	0	0	0	
					189
21A	0	21	0	7	
					230
22A	0	664	0	221	
					167
23	0	1050	0	350	
					220
24	-	1598	0	533	
					203
25	0	1867	17	628	
					197
26	0	1137	33	390	
					221
27	58	942	75	358	
					205
28	120	635	456	404	
					225
29	278	237	469	328	
					216
30	62	71	552	228	
					179
31	29	25	407	154	
					212
32	0	17	282	100	
					165
33	0	0	228	76	
					167
34	0	0	87	29	
					161
35	0	0	33	11	
					171
36	0	0	17	6	
					162
37	0	0	0	0	
sampling period	12:45-13:05	13:05-13:25	13:25-13:45	12:45-13:45	

Direction of the plume centreline: 266 degrees
Plume centre position (x,y) = (4045, 314)

Table 30. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on June 27, 1979; Arc 3

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
21	0	0	-	0	
					224
22	0	333	0	111	
					232
23	0	634	0	211	
					241
24	0	799	28	276	
					255
25	0	602	-	215	
					238
26	16	650	56	241	
					272
27	32	401	185	206	
					331
28	132	205	301	213	
					274
29	189	40	417	215	
					324
30	60	16	257	111	
					312
31	20	0	281	100	
					330
32	0	0	104	35	
					236
33	0	0	60	20	
					236
34	0	-	-	16	
					282
35	0	0	36	12	
					241
36	0	0	0	0	
sampling period	12:45-13:05	13:05-13:25	13:25-13:45	12:45-13:45	

Direction of the plume centreline: 265 degrees
Plume centre position (x,y) = (5328, 474)

Table 31. Meteorological measurements along the tower at the point of release. Time indications are in GMT+1.

Experiment on June 27, 1979

Time	Temperature (deg Celsius) height						Wind-speed (m/s) height				Wind-direction (deg/10) height		
	200	160	120	80	40	2	200	120	60	10	200	120	10
time	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)
0:05	15.0	15.3	15.3	14.9	14.7	14.7	9.2	9.2	5.6	2.5	23	22	20
0:15	15.0	15.2	15.0	14.6	14.6	14.6	9.7	8.7	5.1	2.5	23	22	21
0:25	14.8	15.0	14.9	14.7	14.6	14.7	9.7	8.2	5.6	3.0	23	22	21
0:35	14.7	14.9	14.9	14.7	14.6	14.6	10.2	8.2	6.1	3.6	24	22	20
0:45	14.7	14.7	14.6	14.5	14.3	14.5	10.2	8.2	5.6	3.0	24	22	20
0:55	14.6	14.9	14.8	14.5	14.3	14.2	10.2	8.7	5.6	2.5	24	23	22
1:05	14.5	14.8	14.7	14.4	14.1	14.1	10.2	8.7	6.1	2.5	24	23	22
1:15	14.4	14.8	14.9	14.6	14.2	14.3	10.2	9.2	6.1	2.5	24	24	22
1:25	14.4	14.7	14.5	14.2	14.0	14.2	9.2	8.7	5.6	2.5	25	24	23
1:35	13.6	13.9	13.8	13.9	13.8	14.1	8.7	7.7	5.6	2.5	26	24	22
1:45	13.5	13.7	13.6	13.6	13.8	14.0	8.2	7.2	5.1	2.5	26	24	21
1:55	13.5	13.7	13.5	13.5	13.7	14.0	8.2	7.2	5.1	2.5	27	24	23
2:05	13.5	13.7	13.4	13.4	13.5	13.9	7.7	6.6	4.6	2.5	27	24	23
2:15	13.6	13.8	13.5	13.4	13.5	13.8	7.2	6.1	4.1	2.0	27	25	24
2:25	13.5	13.7	13.6	13.4	13.5	13.8	7.2	6.6	4.6	2.5	26	25	24
2:35	13.3	13.6	13.6	13.4	13.4	13.8	7.2	6.1	3.6	2.0	26	25	23
2:45	13.1	13.5	13.3	13.2	13.3	13.7	6.6	6.1	4.1	2.0	27	26	25
2:55	13.1	13.4	13.4	13.3	13.3	13.7	6.6	6.1	4.1	2.0	27	26	25
3:05	13.2	13.5	13.8	13.4	13.4	13.7	6.6	6.1	4.1	1.5	27	26	24
3:15	13.0	13.3	13.5	13.4	13.4	13.7	6.1	5.6	4.1	1.5	27	26	24
3:25	13.0	13.3	13.5	13.4	13.3	13.6	6.1	5.6	4.1	2.0	27	26	23
3:35	13.0	13.3	13.5	13.3	13.2	13.4	6.1	5.6	4.1	1.5	27	26	23
3:45	13.1	13.3	13.5	13.3	13.2	13.5	6.1	6.1	4.1	1.5	27	26	24
3:55	13.1	13.3	13.4	13.1	13.1	13.4	6.6	6.1	4.1	1.5	27	26	23
4:05	12.9	13.2	13.2	13.1	13.1	13.4	6.6	5.6	3.6	1.5	27	26	24
4:15	13.0	13.2	13.2	13.1	13.1	13.4	6.6	5.6	4.1	1.5	27	26	23
4:25	13.0	13.2	13.3	13.1	13.1	13.4	6.1	5.6	3.6	1.5	26	25	23
4:35	13.1	13.3	13.4	13.2	13.2	13.5	6.6	5.6	4.1	1.5	27	26	25
4:45	13.1	13.3	13.2	13.1	13.2	13.6	6.6	5.6	3.6	1.5	27	25	23
4:55	13.0	13.1	13.2	13.1	13.2	13.6	7.2	5.6	3.6	1.5	27	26	25
5:05	13.0	13.1	13.2	13.2	13.2	13.7	7.2	5.6	3.6	1.5	27	26	23
5:15	13.0	13.2	13.1	13.1	13.3	13.8	7.2	5.1	3.6	2.0	27	25	22
5:25	12.8	12.9	13.0	13.1	13.4	13.9	7.2	5.1	3.6	2.0	27	25	23
5:35	12.8	12.8	13.0	13.2	13.4	13.8	7.2	5.1	3.6	2.0	27	25	23
5:45	13.0	13.0	13.3	13.4	13.8	14.5	7.2	5.6	4.1	2.0	28	27	25
5:55	12.5	12.8	13.1	13.5	13.9	15.1	7.2	5.1	3.6	2.0	28	27	26
6:05	12.8	13.0	13.3	13.7	14.0	14.7	6.1	4.6	3.6	2.0	27	26	25
6:15	12.7	13.0	13.4	13.8	14.2	15.2	5.6	4.6	3.6	2.0	28	26	25
6:25	12.6	13.0	13.6	14.0	14.3	15.4	5.6	4.1	3.6	2.0	27	27	25
6:35	12.6	13.1	13.7	14.0	14.4	15.4	5.6	4.6	4.1	2.5	27	26	27
6:45	12.8	13.2	13.7	14.0	14.5	15.6	5.1	4.6	4.1	2.5	26	25	26
6:55	12.8	13.3	13.8	14.2	14.6	15.8	5.1	4.6	3.6	2.0	26	25	26
7:05	12.9	13.3	13.7	14.2	14.7	15.5	4.6	4.1	4.1	2.5	26	25	25
7:15	12.9	13.3	13.7	14.1	14.6	15.3	4.6	4.6	4.1	2.5	27	25	24
7:25	12.9	13.4	13.9	14.3	14.7	15.5	4.1	4.1	4.1	2.5	26	25	23
7:35	13.1	13.6	14.1	14.5	14.9	15.7	4.1	3.6	3.6	2.0	25	25	23
7:45	13.1	13.5	13.9	14.4	14.8	15.5	4.6	4.6	4.6	3.0	26	25	25

7:55	13.1	13.5	13.9	14.3	14.9	15.7	5.1	5.6	4.6	3.0	26	26	25
8:05	13.2	13.6	14.0	14.5	14.9	15.8	5.1	5.1	4.6	2.5	26	26	24
8:15	13.2	13.6	14.0	14.4	14.8	15.7	4.6	4.1	4.6	2.5	26	25	25
8:25	13.2	13.6	14.1	14.4	14.9	15.7	4.6	4.6	4.1	3.0	25	24	24
8:35	13.2	13.6	14.1	14.6	15.0	15.6	4.6	4.6	4.6	3.0	26	25	25
8:45	13.3	13.7	14.1	14.5	15.1	15.9	5.1	5.1	4.6	3.0	25	25	25
8:55	13.4	13.7	14.2	14.5	14.9	15.9	4.6	5.1	5.1	3.0	26	25	23
9:05	13.4	13.9	14.3	14.7	15.1	16.3	5.1	5.1	5.1	3.0	25	26	26
9:15	13.8	14.3	14.8	15.2	15.6	17.1	5.1	5.1	5.1	3.0	25	24	23
9:25	14.0	14.4	14.8	15.3	16.0	17.7	5.1	5.1	5.1	3.0	26	25	23
9:35	14.1	14.5	14.9	15.3	15.9	17.9	5.6	5.6	4.6	3.0	27	26	27
9:45	14.5	14.9	15.4	16.0	16.7	18.3	5.6	5.6	5.1	3.0	26	26	25
9:55	14.7	15.2	15.6	16.0	16.4	17.9	6.1	5.6	5.6	3.6	25	24	23
10:05	14.6	15.0	15.4	16.0	16.8	18.1	6.1	5.6	5.6	3.6	26	25	24
10:15	15.0	15.5	15.8	16.4	17.1	18.5	6.1	5.6	5.1	3.6	24	24	21
10:25	15.1	15.6	16.0	16.4	16.8	18.5	5.6	5.1	5.1	3.0	25	25	23
10:35	15.0	15.4	15.9	16.4	16.7	17.6	6.1	5.6	5.1	3.6	25	25	21
10:45	14.7	15.1	15.6	16.0	16.5	17.9	6.1	6.1	6.1	3.6	26	26	26
10:55	14.8	15.3	15.8	16.2	16.8	17.7	6.1	5.6	5.6	3.6	28	26	25
11:05	15.2	15.6	16.0	16.5	17.1	18.5	5.6	5.6	5.6	3.0	27	26	24
11:15	15.1	15.5	15.9	16.5	17.1	18.4	6.1	5.6	5.6	3.0	27	26	26
11:25	15.3	15.7	16.3	16.8	17.6	19.5	6.6	6.1	6.1	3.6	27	26	26
11:35	15.4	15.9	16.4	16.9	17.3	18.9	6.6	6.6	6.1	4.1	27	26	26
11:45	15.2	15.5	16.0	16.5	17.1	18.1	6.6	6.6	6.1	3.6	26	26	26
11:55	15.4	15.9	16.4	17.0	17.6	19.9	7.2	7.2	7.2	4.1	26	26	26
12:05	15.5	16.0	16.4	16.8	17.4	19.3	7.7	7.2	7.2	4.1	25	25	25
12:15	15.1	15.5	16.1	16.5	17.2	19.4	7.7	7.2	7.7	4.1	28	28	28
12:25	15.4	15.7	16.2	16.6	17.4	20.0	7.2	7.2	7.2	4.1	27	27	26
12:35	15.4	15.8	16.4	16.8	17.5	19.1	7.2	7.7	7.2	4.1	26	26	25
12:45	15.6	16.0	16.6	17.1	17.5	18.4	6.6	6.6	6.1	3.6	26	25	25
12:55	14.9	15.3	15.8	16.4	16.7	18.2	7.2	7.2	7.2	4.1	28	27	28
13:05	15.0	15.5	15.9	16.4	16.7	18.3	7.2	7.2	7.2	4.1	27	27	26
13:15	15.3	15.8	16.2	16.8	17.2	19.0	7.2	6.6	6.6	3.6	26	26	26
13:25	15.5	15.9	16.4	16.9	17.5	19.5	8.2	7.7	7.2	4.1	25	25	25
13:35	16.0	16.3	16.7	17.1	17.7	19.4	7.7	7.7	7.7	4.6	26	25	24
13:45	15.9	16.4	16.9	17.4	17.8	19.8	8.2	8.2	8.2	4.6	26	26	26
13:55	15.7	16.2	16.7	17.1	17.6	18.8	8.2	8.2	7.7	4.6	26	25	24
14:05	15.9	16.4	16.7	17.2	17.8	19.1	7.7	7.7	7.2	4.1	25	25	23
14:15	16.0	16.5	17.0	17.6	18.1	19.6	7.7	8.2	7.7	4.6	25	23	24
14:25	15.8	16.2	16.6	17.1	17.6	19.3	9.7	9.2	8.7	5.1	27	26	25
14:35	15.9	16.2	16.7	17.4	18.3	20.0	9.2	9.7	9.2	5.1	27	26	26
14:45	16.0	16.4	16.8	17.6	18.4	20.5	9.2	8.7	9.2	5.1	27	27	27
14:55	15.8	16.3	16.8	17.2	17.8	19.2	8.7	8.2	8.2	4.1	26	26	25
15:05	15.9	16.4	16.9	17.6	18.2	19.9	9.2	8.2	7.7	4.1	25	24	25
15:15	15.7	16.1	16.5	17.1	17.7	18.9	9.2	8.7	8.2	4.6	27	26	25
15:25	16.1	16.5	17.0	17.4	17.8	18.9	8.7	8.2	7.7	4.1	26	25	24
15:35	16.0	16.4	16.9	17.3	17.6	19.0	9.7	9.2	8.7	5.1	27	26	27
15:45	15.7	16.1	16.6	17.2	17.9	18.8	9.2	9.2	8.7	4.6	28	27	27
15:55	15.9	16.3	16.7	17.1	17.5	18.6	9.2	9.2	9.2	4.1	28	28	26
16:05	15.2	15.6	16.2	16.6	17.2	19.0	9.7	9.7	9.7	4.6	29	29	29
16:15	15.0	15.4	15.9	16.4	16.8	18.6	9.2	9.7	10.2	5.1	30	29	28
16:25	14.9	15.3	15.9	16.3	16.6	18.5	9.2	9.7	9.7	4.6	29	29	28
16:35	14.8	15.3	15.8	16.1	16.7	18.2	9.7	9.2	10.2	4.6	29	28	29
16:45	14.7	15.1	15.6	16.1	16.6	18.0	9.7	9.2	9.2	4.6	29	28	26
16:55	14.7	15.1	15.6	16.0	16.7	18.1	10.2	9.7	10.2	5.1	28	27	27
17:05	14.7	15.1	15.6	16.1	16.9	18.2	10.2	9.2	9.2	4.6	29	28	28
17:15	14.8	15.2	15.6	16.0	16.6	17.8	9.7	9.2	9.7	5.1	28	28	28
17:25	14.7	15.1	15.6	16.1	16.6	17.7	9.2	8.7	8.7	4.1	30	29	29
17:35	14.8	15.2	15.8	16.2	16.6	17.5	9.2	8.7	8.7	3.6	29	27	27

17:45	14.6	15.0	15.5	16.0	16.5	18.0	10.2	9.2	9.7	4.1	29	28	28
17:55	14.7	15.1	15.6	15.9	16.4	17.4	10.8	10.2	10.2	5.1	28	28	27
18:05	14.6	15.0	15.5	16.0	16.6	17.5	10.8	10.2	10.2	5.1	28	27	27
18:15	14.5	15.0	15.4	15.8	16.3	17.2	10.8	10.2	10.2	5.1	28	27	26
18:25	14.5	15.0	15.5	15.9	16.3	17.2	10.2	9.7	9.7	4.6	29	28	26
18:35	14.3	14.7	15.1	15.7	16.0	16.6	10.8	10.2	10.2	5.6	28	28	27
18:45	14.2	14.6	15.0	15.5	15.9	16.6	10.2	9.7	9.7	5.1	28	27	27
18:55	14.1	14.5	15.0	15.5	15.9	16.4	10.2	9.7	9.2	5.1	28	27	28
19:05	13.9	14.4	14.8	15.2	15.7	16.3	10.2	9.2	8.7	4.6	29	28	28
19:15	13.8	14.2	14.6	15.0	15.3	15.9	10.2	9.2	8.7	4.6	28	27	27
19:25	13.7	14.1	14.6	15.0	15.3	15.8	8.7	7.7	7.7	3.6	29	28	29
19:35	13.6	14.0	14.5	14.8	15.2	15.8	8.2	7.7	7.2	3.6	28	27	26
19:45	13.6	14.0	14.4	14.8	15.2	15.5	8.7	7.7	7.2	3.6	28	27	27
19:55	13.6	14.0	14.4	14.8	15.1	15.5	9.2	7.7	7.2	3.6	29	28	27
20:05	13.5	13.9	14.3	14.7	14.9	15.1	9.2	7.7	7.2	3.6	29	28	28
20:15	13.5	13.9	14.2	14.5	14.7	15.0	10.2	8.7	7.7	3.6	29	28	28
20:25	13.4	13.7	14.0	14.3	14.6	14.7	10.2	8.7	8.2	4.1	29	28	29
20:35	13.3	13.7	13.9	14.1	14.4	14.6	10.2	8.2	7.2	3.0	29	28	28
20:45	13.1	13.4	13.7	14.1	14.3	14.3	9.7	8.2	6.6	2.5	29	28	28
20:55	13.0	13.3	13.6	13.9	14.1	14.2	9.7	8.2	6.6	2.5	29	28	27
21:05	12.9	13.2	13.5	13.8	13.9	14.0	10.2	8.2	7.2	3.0	29	28	30
21:15	12.7	13.1	13.4	13.6	13.8	13.9	10.8	8.7	7.2	3.0	29	28	29
21:25	12.8	13.1	13.3	13.5	13.7	13.7	11.3	9.2	7.7	3.6	29	29	29
21:35	12.6	12.9	13.1	13.4	13.5	13.9	11.3	9.2	7.7	3.6	29	28	27
21:45	12.4	12.7	12.9	13.2	13.3	13.4	10.8	8.7	7.2	3.0	29	28	29
21:55	12.5	12.8	13.0	13.2	13.3	13.7	11.3	8.7	7.2	3.0	29	28	27
22:05	12.4	12.7	12.9	13.1	13.3	13.8	11.3	8.7	6.6	3.0	29	28	28
22:15	12.4	12.7	12.9	13.1	13.4	13.7	11.3	8.7	6.6	3.0	29	28	28
22:25	12.3	12.7	12.9	13.1	13.3	13.4	10.2	8.2	6.1	2.5	29	28	26
22:35	12.2	12.6	12.8	12.9	13.1	13.3	9.7	8.2	6.6	2.5	29	28	27
22:45	12.1	12.4	12.6	12.8	13.0	13.2	9.2	7.7	6.1	2.5	29	28	27
22:55	12.0	12.3	12.5	12.7	12.9	13.0	9.7	7.7	6.1	2.5	29	28	27
23:05	11.9	12.2	12.4	12.6	12.9	13.2	9.2	7.2	5.6	2.0	28	27	26
23:15	11.9	12.0	12.3	12.6	12.8	13.3	9.2	6.6	5.1	2.5	28	26	25
23:25	11.5	11.8	12.1	12.2	12.4	12.9	8.2	5.6	5.1	2.5	28	26	24
23:35	11.7	11.9	12.1	12.3	12.5	12.9	8.7	6.1	5.1	2.5	28	26	25
23:45	11.8	12.1	12.3	12.4	12.6	13.0	8.7	6.1	5.1	2.5	28	26	25
23:55	11.7	12.0	12.3	12.6	12.8	13.1	8.7	6.1	5.1	2.5	28	27	25

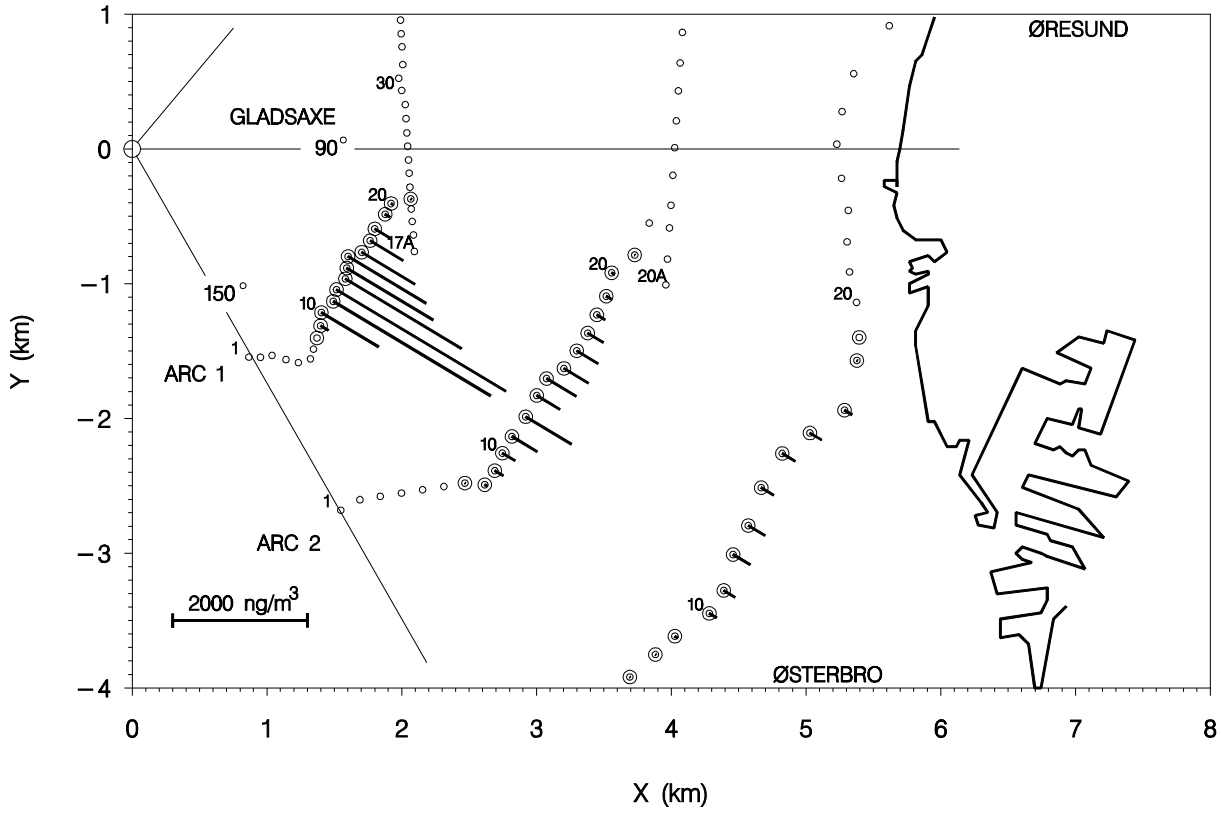

Figure 10. Experiment on July 6, 1979. The bars indicate the mean measured tracer concentrations for the period 12:50-13:50 (run 1-3, Table 32-34), for the individual measuring positions.

Table 32. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on July 6, 1979; Arc 1

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
8	0	0	0	0	
					92
9	182	48	166	132	
					86
10	1610	944	414	989	
					117
11	3300	3985	880	2722	
					87
12	2965	3730	2088	2928	
					103
13	1690	2503	1833	2009	
					73
14	1132	2024	1323	1493	
					78
15	956	1546	1546	1350	
					80
16	612	678	1467	919	
					106
17	-	-	-	568	
					93
18	48	0	759	269	
					132
19	0	0	242	81	
					91
20	0	0	86	29	
					106
21	0	19	26	15	
sampling period	12.50-13:10	13:10-13:30	13:30-13:50	12.50-13:50	

Direction of the plume centreline: 302 degrees
Plume centre position (x,y) = (1570, -979)

Table 33. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on July 6, 1979; Arc 2

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
7	22	0	0	7	
					64
8	68	0	65	44	
					128
9	291	22	117	143	
					141
10	337	142	170	216	
					143
11	544	386	374	435	
					178
12	828	844	702	791	
					177
13	229	495	476	400	
					146
14	597	275	668	513	
					130
15	535	238	495	422	
					161
16	501	80	516	366	
					154
17	281	0	535	272	
					152
18	189	0	229	139	
					154
19	53	0	223	92	
					170
20	40	0	111	50	
					200
21	15	0	0	5	
sampling period	12:50-13:10	13:10-13:30	13:30-13:50	12:50 13:50	

Direction of plume centreline: 300 degrees
Plume centre position (x,y) = (3080, -1795)

Table 34. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on July 6, 1979; Arc 3

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
7	16	0	0	5	
					240
8	12	16	0	9	
					190
9	53	62	34	50	
					275
10	168	112	87	123	
					201
11	262	156	162	193	
					265
12	355	234	293	294	
					243
13	477	112	277	289	
					291
14	318	59	268	215	
					298
15	461	16	196	224	
					235
16	318	0	281	200	
					276
17	293	0	87	127	
					365
18	31	0	0	10	
					156
19	0	0	0	0	
sampling period	12:50-13:10-	13:10-13:30-	13:30-13:50-	12:50 13:50	

Direction of plume centreline: 300 degrees
Plume centre position (x,y) = (4608, -2691)

Table 35. Meteorological measurements along the tower at the point of release. Time indications are in GMT+1.

Experiment on July 6, 1979

	Temperature (deg Celsius) heights						Wind-speed (m/s) heights				Wind-direction (deg/10) heights		
time	200 (m)	160 (m)	120 (m)	80 (m)	40 (m)	2 (m)	200 (m)	120 (m)	60 (m)	10 (m)	200 (m)	120 (m)	10 (m)
0:05	16.0	16.0	16.3	16.3	15.7	15.7	10.8	9.7	7.7	2.0	31	30	28
0:15	15.8	16.0	16.1	16.0	15.3	15.5	10.2	9.2	7.7	2.5	31	30	28
0:25	15.5	15.6	15.7	15.5	15.6	15.5	10.8	8.7	7.2	2.5	31	29	27
0:35	15.3	15.4	15.7	15.6	15.5	15.6	10.2	8.7	6.6	2.5	30	29	28
0:45	14.9	15.0	15.2	15.3	15.3	15.4	10.2	8.7	6.6	3.0	30	29	27
0:55	14.9	15.0	15.0	15.1	15.2	15.3	10.2	8.7	6.6	2.5	30	29	27
1:05	15.2	15.2	15.0	15.1	15.2	15.2	10.2	8.7	6.6	2.5	30	29	29
1:15	15.0	15.1	14.9	14.9	15.0	15.2	11.3	9.2	7.2	2.5	30	29	27
1:25	14.9	15.0	14.7	14.7	14.8	15.0	10.8	8.7	6.6	2.5	30	29	29
1:35	14.6	14.7	14.7	14.8	14.9	15.0	11.3	9.2	7.2	2.5	30	29	27
1:45	14.5	14.7	14.7	14.7	14.9	15.2	11.3	9.2	7.2	3.0	30	28	27
1:55	14.5	14.6	14.5	14.5	14.6	15.0	11.3	9.2	7.2	3.0	30	28	29
2:05	14.4	14.7	14.5	14.5	14.6	14.9	11.8	9.2	7.2	3.0	30	29	28
2:15	14.2	14.4	14.3	14.3	14.6	14.9	11.3	9.2	7.7	3.6	30	28	28
2:25	14.2	14.3	14.2	14.2	14.4	14.7	10.8	8.7	7.7	3.6	30	29	29
2:35	14.0	14.1	14.1	14.2	14.3	14.7	10.8	8.7	7.7	3.0	30	28	29
2:45	14.1	14.2	14.1	14.1	14.3	14.7	11.3	9.2	7.2	3.0	30	28	27
2:55	13.9	14.1	14.1	14.1	14.3	14.6	11.3	9.2	7.2	2.5	30	28	27
3:05	13.8	14.0	14.0	14.0	14.2	14.5	11.3	9.2	7.2	3.0	30	28	27
3:15	13.8	14.1	14.0	14.0	14.1	14.4	11.3	9.2	7.7	3.0	30	29	27
3:25	13.7	13.9	13.8	13.9	14.0	14.3	11.3	9.7	8.2	3.6	30	28	28
3:35	13.4	13.5	13.4	13.6	13.8	14.2	11.8	9.7	8.2	3.6	30	28	27
3:45	13.5	13.6	13.3	13.5	13.7	14.1	11.8	9.7	7.7	3.6	30	28	27
3:55	13.3	13.5	13.3	13.4	13.6	14.1	12.3	9.7	7.7	3.6	30	28	27
4:05	13.1	13.1	13.2	13.3	13.6	13.9	12.3	9.7	8.2	3.6	30	28	27
4:15	12.9	13.0	13.1	13.3	13.5	13.9	12.8	9.7	8.2	3.0	30	28	28
4:25	12.5	12.7	12.9	13.2	13.4	13.9	12.3	9.2	8.2	3.0	29	28	28
4:35	12.3	12.6	12.8	13.1	13.3	13.9	12.3	9.2	8.2	3.6	29	28	28
4:45	12.2	12.5	12.8	13.1	13.4	13.9	12.3	9.7	8.7	4.1	29	28	27
4:55	12.2	12.5	12.8	13.1	13.4	14.0	11.8	9.7	8.7	4.1	29	28	27
5:05	12.1	12.4	12.7	13.1	13.5	14.1	11.3	9.2	8.2	3.6	29	28	28
5:15	12.1	12.5	12.8	13.2	13.6	14.2	11.3	9.2	8.2	4.1	29	28	27
5:25	12.1	12.5	12.9	13.3	13.6	14.4	11.3	9.7	8.7	3.6	29	28	26
5:35	12.2	12.6	13.1	13.4	13.7	14.5	10.8	9.2	8.7	4.1	28	28	27
5:45	12.2	12.6	13.1	13.4	13.8	14.6	10.8	8.7	8.7	3.6	29	28	28
5:55	12.3	12.7	13.2	13.5	13.9	14.7	10.2	8.7	8.2	3.6	29	28	28
6:05	12.2	12.7	13.2	13.5	13.9	14.7	9.7	8.2	8.2	4.1	29	28	27
6:15	12.3	12.7	13.2	13.6	13.9	14.7	9.7	8.7	9.2	4.6	29	28	27
6:25	12.3	12.7	13.2	13.5	13.9	14.8	9.7	8.7	8.7	4.1	29	28	28
6:35	12.4	12.8	13.3	13.6	14.0	14.8	10.2	9.2	8.7	4.1	29	28	27
6:45	12.5	12.9	13.3	13.6	14.0	14.9	10.2	9.2	8.7	4.1	29	28	28
6:55	12.6	13.0	13.5	13.9	14.2	15.3	10.2	9.2	8.7	4.1	29	28	29
7:05	12.9	13.3	13.8	14.2	14.6	15.8	9.7	8.2	7.7	4.1	29	28	27
7:15	13.1	13.5	14.1	14.5	15.0	16.0	9.7	8.2	7.7	4.1	29	29	28
7:25	13.3	13.8	14.2	14.6	15.1	16.3	9.2	8.2	8.2	3.6	29	29	27
7:35	13.5	13.9	14.4	14.8	15.2	16.4	8.7	8.2	8.2	4.1	30	29	28
7:45	13.6	14.0	14.6	15.0	15.5	16.7	8.2	7.7	7.2	3.6	30	29	29

7:55	13.6	14.0	14.5	14.9	15.3	16.7	7.7	7.2	7.2	3.6	29	28	28
8:05	13.4	13.8	14.3	14.8	15.6	17.4	7.2	7.2	7.2	3.0	29	28	28
8:15	13.4	13.8	14.3	14.6	15.1	16.7	7.2	7.7	8.2	4.1	29	28	26
8:25	13.5	14.0	14.6	15.1	15.5	17.8	7.7	7.2	7.7	4.1	30	29	29
8:35	13.9	14.3	14.8	15.3	16.0	17.8	7.2	7.2	7.2	3.6	30	29	28
8:45	14.1	14.6	15.2	15.7	16.4	18.8	7.7	7.7	7.7	3.0	30	30	31
8:55	14.5	14.8	15.5	15.9	16.4	18.7	8.2	7.7	8.2	3.6	30	30	30
9:05	14.9	15.4	15.8	16.2	16.8	19.3	8.2	7.7	8.2	3.6	30	30	29
9:15	15.0	15.3	15.9	16.3	16.7	19.5	8.2	8.2	8.7	3.6	31	30	28
9:25	14.8	15.3	16.0	16.3	16.8	19.8	8.2	8.2	8.2	4.1	30	29	28
9:35	15.0	15.2	15.9	16.2	16.7	19.8	8.7	8.7	9.2	4.6	30	29	30
9:45	14.8	15.2	15.8	16.3	17.0	19.6	8.7	8.2	9.2	4.6	29	29	27
9:55	15.2	15.5	16.2	16.8	17.5	20.0	8.7	8.7	9.2	4.1	29	28	28
10:05	15.3	15.7	16.2	16.9	17.4	19.8	8.7	8.2	9.2	4.1	30	30	29
10:15	15.2	15.6	16.3	16.7	17.3	19.5	8.7	8.7	9.7	4.6	30	30	29
10:25	14.9	15.4	16.2	16.7	17.4	19.3	9.2	8.7	9.2	4.1	30	28	29
10:35	14.8	15.3	15.9	16.5	17.3	19.1	9.7	9.2	9.7	4.1	30	29	28
10:45	99.9	99.9	99.9	99.9	99.9	99.9	-9.9	-9.9	-9.9	-9.9	-99	-99	-99
10:55	15.2	15.6	16.1	16.5	17.1	19.2	8.7	8.2	8.7	4.1	31	30	29
11:05	15.0	15.3	16.0	16.3	16.8	19.0	8.2	7.7	8.7	4.1	30	29	31
11:15	14.8	15.2	15.8	16.3	16.9	19.7	9.7	9.2	10.2	5.1	31	30	29
11:25	15.1	15.4	16.1	16.5	17.3	20.3	10.2	9.7	10.8	4.1	31	30	30
11:35	15.4	15.7	16.3	16.8	17.2	20.1	10.2	10.2	11.3	4.1	31	31	30
11:45	15.5	15.8	16.3	16.7	17.0	20.1	9.7	9.7	10.8	4.1	31	31	30
11:55	15.3	15.7	16.2	16.7	17.4	19.8	9.2	8.7	9.7	4.1	32	31	28
12:05	15.6	16.0	16.5	17.1	17.5	20.8	8.7	8.7	9.7	4.1	29	28	27
12:15	15.6	16.1	16.6	17.1	17.8	20.8	9.2	9.2	9.7	4.1	31	30	28
12:25	15.5	15.8	16.4	16.9	17.5	20.2	9.7	9.7	10.2	4.6	30	30	29
12:35	15.5	15.8	16.5	17.0	17.4	20.3	9.7	9.7	10.8	4.6	31	30	30
12:45	15.6	16.0	16.6	17.1	17.5	20.9	9.7	9.7	10.8	4.6	31	31	30
12:55	15.8	16.1	16.7	17.2	17.7	21.2	9.7	9.2	10.2	4.1	31	30	30
13:05	15.7	16.0	16.6	17.0	17.5	20.9	9.7	9.7	10.8	4.1	31	31	30
13:15	15.7	16.1	16.8	17.2	17.6	21.1	10.2	10.2	11.3	4.1	31	31	29
13:25	16.1	16.5	17.0	17.4	18.1	20.9	9.7	9.7	10.8	4.6	30	30	29
13:35	15.7	16.1	16.6	17.2	17.7	20.1	9.7	9.7	11.3	4.1	31	31	30
13:45	15.6	16.1	16.7	17.2	17.9	19.7	9.7	9.7	10.8	4.6	30	30	29
13:55	15.8	16.2	16.6	17.2	17.8	20.5	9.2	9.2	9.7	4.6	30	29	31
14:05	15.5	15.9	16.5	16.9	17.4	20.1	9.2	9.2	9.7	4.1	31	30	28
14:15	15.5	15.9	16.6	17.0	17.4	20.0	9.2	9.7	10.8	4.6	30	30	30
14:25	15.7	16.0	16.7	17.2	17.8	20.8	9.7	9.7	10.8	5.1	30	29	28
14:35	15.8	16.2	16.8	17.3	17.8	20.4	9.7	9.7	10.2	5.1	30	29	28
14:45	15.7	16.1	16.8	17.5	18.0	20.4	9.7	9.2	10.2	4.6	30	29	27
14:55	15.9	16.3	16.9	17.4	18.1	20.3	8.7	9.2	9.2	4.1	30	30	30
15:05	15.7	16.2	16.9	17.2	17.7	20.0	8.7	8.7	9.2	4.1	30	30	29
15:15	15.8	16.1	16.7	17.2	17.8	19.8	8.7	7.7	9.2	3.6	30	30	30
15:25	16.0	16.3	16.9	17.3	17.6	19.8	8.7	8.2	9.2	3.6	30	30	31
15:35	15.9	16.3	16.9	17.5	18.2	20.2	8.2	7.7	8.7	3.6	30	30	28
15:45	15.9	16.3	16.9	17.3	17.9	19.7	8.2	7.7	8.2	4.1	30	30	29
15:55	15.7	16.1	16.6	17.0	17.6	19.6	7.7	7.2	8.2	3.6	30	29	28
16:05	15.8	16.3	16.8	17.1	17.5	19.4	7.7	7.7	8.2	4.1	30	29	30
16:15	15.6	16.0	16.6	17.0	17.4	18.9	8.2	8.2	8.7	4.6	30	29	29
16:25	15.6	16.0	16.6	17.1	17.7	18.8	8.2	8.2	8.7	4.1	29	29	28
16:35	15.6	16.0	16.6	17.1	17.7	18.9	8.2	8.2	8.2	4.1	30	29	29
16:45	15.6	16.0	16.5	16.9	17.3	18.9	8.2	8.2	8.2	3.6	29	29	29
16:55	15.6	16.0	16.5	16.8	17.4	19.0	7.7	7.7	8.2	4.1	30	29	29
17:05	15.5	16.0	16.4	16.9	17.4	18.7	8.7	8.2	9.2	3.6	30	29	28
17:15	15.5	15.9	16.4	16.8	17.3	18.5	9.2	8.7	8.7	3.6	30	29	28
17:25	15.5	16.0	16.6	17.1	17.4	18.5	8.7	8.2	8.2	3.6	29	28	28
17:35	15.6	16.0	16.4	16.8	17.3	18.5	9.2	8.2	8.2	4.1	30	29	27

17:45	15.7	16.2	16.7	17.2	17.5	18.8	8.7	8.7	8.7	4.6	30	29	27
17:55	15.9	16.3	16.8	17.2	17.6	18.7	9.2	8.7	8.7	4.1	30	29	28
18:05	16.1	16.5	17.0	17.3	17.8	18.9	9.2	8.2	8.2	3.6	31	30	29
18:15	16.1	16.6	17.0	17.5	17.8	18.8	8.7	8.7	8.2	3.6	31	30	28
18:25	16.2	16.6	17.1	17.4	17.8	18.8	8.7	8.2	8.7	3.6	31	30	30
18:35	16.3	16.7	17.2	17.5	17.9	19.1	7.7	7.7	7.7	3.0	32	30	30
18:45	16.2	16.7	17.2	17.5	17.9	18.9	8.2	7.7	7.7	2.5	32	32	29
18:55	16.2	16.6	17.0	17.4	17.7	18.7	8.2	7.7	7.7	3.0	32	32	31
19:05	16.1	16.6	17.0	17.4	17.8	18.6	8.7	8.2	7.7	2.5	33	33	32
19:15	16.1	16.5	17.0	17.3	17.7	18.5	8.7	8.2	8.2	2.5	33	32	30
19:25	16.0	16.4	16.9	17.2	17.6	18.6	8.7	7.7	8.2	2.5	32	32	31
19:35	15.9	16.3	16.7	17.1	17.4	18.4	8.7	8.2	8.2	2.5	32	31	-9
19:45	15.9	16.3	16.7	17.0	17.4	18.1	8.7	7.7	7.2	2.5	33	32	30
19:55	15.8	16.2	16.7	17.0	17.3	18.0	8.7	7.7	7.7	2.5	33	32	31
20:05	15.7	16.1	16.6	16.9	17.3	17.8	8.2	7.2	6.6	2.0	33	32	30
20:15	15.7	16.1	16.5	16.8	17.1	17.9	7.7	6.6	5.6	2.0	33	32	31
20:25	15.7	16.0	16.4	16.8	17.1	17.7	7.2	6.1	6.1	2.0	33	32	28
20:35	15.7	16.0	16.4	16.7	17.0	17.8	7.7	6.6	6.1	2.0	33	31	30
20:45	15.6	16.0	16.3	16.6	16.9	17.4	7.7	7.2	6.1	1.5	33	32	30
20:55	15.8	16.0	16.3	16.6	16.8	17.5	8.2	7.2	6.1	2.0	33	32	31
21:05	16.0	16.1	16.4	16.6	16.8	17.4	8.2	6.6	6.1	2.0	34	32	30
21:15	16.1	16.2	16.4	16.6	16.8	17.4	8.7	6.6	5.6	2.0	34	32	31
21:25	15.6	15.9	16.2	16.4	16.7	17.0	8.2	6.6	6.1	2.0	33	31	29
21:35	15.5	15.8	16.0	16.2	16.3	16.7	8.2	6.6	6.1	2.0	32	31	29
21:45	15.5	15.7	16.0	16.1	16.2	16.6	9.2	7.7	6.6	2.0	32	31	31
21:55	15.1	15.3	15.6	15.8	15.9	16.3	9.2	7.2	6.6	2.0	31	30	28
22:05	15.2	15.5	15.7	15.8	15.8	16.1	9.2	7.2	6.1	2.5	31	30	28
22:15	15.0	15.3	15.5	15.7	15.8	15.8	9.7	7.7	6.6	2.0	31	30	28
22:25	14.7	15.0	15.3	15.4	15.6	15.7	9.2	7.7	6.6	2.5	31	30	29
22:35	14.7	14.9	15.2	15.3	15.4	15.9	9.2	7.2	6.1	2.0	31	30	31
22:45	14.7	15.0	15.2	15.3	15.4	15.7	9.2	7.2	5.6	1.5	31	31	30
22:55	14.5	14.8	15.0	15.3	15.5	15.7	9.7	7.2	6.1	2.0	32	31	30
23:05	14.3	14.6	14.8	15.1	15.3	15.5	9.2	7.2	6.1	2.0	31	30	30
23:15	14.1	14.5	14.7	14.9	15.1	15.2	9.2	7.2	6.1	2.0	31	31	29
23:25	14.0	14.2	14.5	14.7	14.9	15.3	9.7	7.7	6.6	2.0	32	30	29
23:35	14.0	14.2	14.5	14.6	14.7	15.3	9.7	7.7	6.6	2.5	32	31	29
23:45	13.9	14.1	14.4	14.5	14.6	14.9	9.7	8.2	7.2	2.0	32	31	29
23:55	13.9	14.1	14.3	14.5	14.6	15.2	10.2	8.2	7.2	2.5	32	30	30

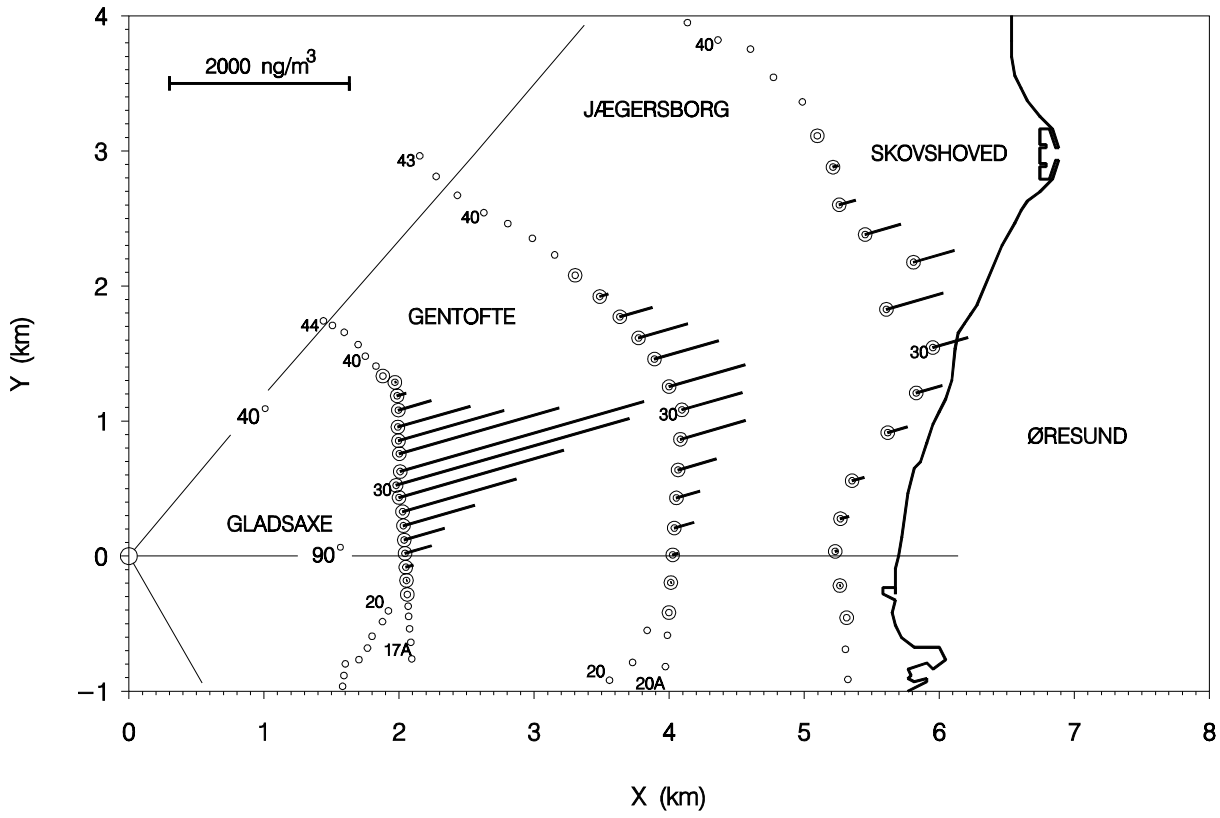

Figure 11. Experiment on July 19, 1979. The bars indicate the mean measured tracer concentrations for the period 12:15-13:18 (run 1-3, Table 36-38), for the individual measuring positions.

Table 36. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on July 19, 1979; Arc 1

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
22	0	0	0	0	
					102
23	0	0	15	5	
					96
24	0	0	246	82	
					100
25	0	0	915	305	
					97
26	0	15	1373	463	
					104
27	15	131	2317	821	
					102
28	185	192	3556	1311	
					108
29	607	977	4114	1899	
					93
30	1326	2903	3845	2691	
					90
31	1730	4267	2441	2813	
					129
32	2499	2653	377	1843	
					94
33	2807	796	46	1216	
					99
34	-	-	-	833	
					119
35	1080	50	0	377	
					104
36	277	23	0	100	
					101
37	38	0	0	13	
					69
38	0	0	0	0	
sampling period	12:15-12:35	12:35-12:55	12:55-13:15	12:15 13:15	

Direction of plume centreline: 254 degrees
Plume centre position (x,y) = (1990, 568)

Table 37. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on July 19, 1979; Arc 2

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
23	0	0	0	0	
					210
24	0	0	15	5	
					193
25	0	0	182	61	
					188
26	0	0	669	223	
					210
27	0	0	810	270	
					195
28	15	34	1270	440	
					213
29	84	380	1787	750	
					206
30	373	1118	593	694	
					192
31	958	1502	175	878	
					226
32	1483	730	0	738	
					183
33	1512	182	0	565	
					189
34	1114	0	0	371	
					185
35	285	0	0	95	
					201
36	0	0	0	0	
sampling period	12:18-12:38	12:38-12:58	12:58-13:18	12:18-13:18	

Direction of plume centreline: 254 degrees
Plume centre position (x,y) = (4050, 1163)

Table 38. Measured tracer concentrations and calculated mean concentrations. Also shown is the crosswind distances between the sampling positions. A lost sample is indicated by '-' and an interpolated value has been used in the calculation of the mean concentration. A concentration below the detection limit (~9 ng/m^3) is indicated by '0' . Time indications are in GMT+1.

Experiment on July 19, 1979; Arc 3

position	measured tracer concentration			mean tracer concentration	crosswind distance
	(ng/m^3)	(ng/m^3)	(ng/m^3)	(ng/m^3)	(m)
	run1	run2	run3	run1-3	
23	0	0	0	0	
					242
24	0	0	15	5	
					252
25	0	0	72	24	
					220
26	0	0	281	94	
					243
27	0	0	414	138	
					263
28	19	38	620	226	
					219
29	106	198	585	297	
					285
30	376	608	228	404	
					372
31	897	1019	42	653	
					275
32	1141	251	15	469	
					301
33	1182	46	0	409	
					267
34	559	0	0	186	
					280
35	171	0	0	57	
					256
36	0	0	0	0	
sampling period	12:18-12:38	12:38-12:58	12:58-13:18	12:18-13:18	

Direction of plume centreline: 253 degrees
Plume centre position (x,y) = (5701, 1751)

Table 39. Meteorological measurements along the tower at the point of release. Time indications are in GMT+1.

Experiment on July 19, 1979

Time	Temperature (deg Celsius) height						Wind-speed (m/s) height				Wind-direction (deg/10) height		
time	200 (m)	160 (m)	120 (m)	80 (m)	40 (m)	2 (m)	200 (m)	120 (m)	60 (m)	10 (m)	200 (m)	120 (m)	10 (m)
0:05	12.6	12.5	12.7	12.9	13.2	13.6	8.7	7.2	6.1	3.0	27	25	24
0:15	12.7	12.7	12.6	12.9	13.1	13.5	8.7	6.6	5.6	3.0	27	25	24
0:25	12.2	12.3	12.6	12.8	13.1	13.5	9.2	7.2	5.6	3.0	26	25	24
0:35	12.1	12.2	12.5	12.8	13.1	13.4	9.2	6.6	5.1	2.5	27	25	24
0:45	12.1	12.2	12.5	12.8	13.0	13.4	9.7	7.2	5.1	2.5	27	26	25
0:55	12.0	12.1	12.5	12.7	13.0	13.4	9.7	7.7	6.1	3.0	27	26	25
1:05	11.9	12.1	12.4	12.7	13.0	13.4	9.7	7.7	6.1	3.0	27	26	25
1:15	11.8	12.1	12.3	12.6	12.9	13.3	9.7	7.7	6.1	3.0	26	25	25
1:25	11.7	12.0	12.3	12.6	12.8	13.3	9.2	7.7	5.6	2.5	26	25	24
1:35	11.8	12.0	12.3	12.6	12.8	13.2	8.7	7.2	5.1	3.0	26	25	23
1:45	11.6	11.9	12.3	12.6	12.8	13.2	8.7	7.2	5.1	3.0	26	25	23
1:55	11.5	11.8	12.2	12.5	12.8	13.2	8.2	6.6	5.1	2.5	27	25	24
2:05	11.6	11.8	12.1	12.5	12.7	13.1	8.2	6.6	5.1	2.5	27	25	24
2:15	11.3	11.6	12.0	12.4	12.7	13.1	8.2	6.6	5.1	2.5	26	25	24
2:25	11.0	11.3	11.8	12.1	12.4	12.9	8.7	7.2	6.1	3.0	27	26	25
2:35	11.8	11.8	11.7	11.9	12.1	12.6	8.2	6.6	5.1	2.5	28	26	24
2:45	11.6	11.9	12.0	12.1	12.2	12.6	8.2	6.1	4.6	2.5	27	26	24
2:55	11.4	11.7	11.9	12.0	12.2	12.6	8.2	6.1	4.6	2.5	27	25	24
3:05	11.4	11.5	11.7	12.0	12.2	12.6	8.2	6.1	4.6	2.5	26	25	24
3:15	11.4	11.6	11.8	12.0	12.2	12.6	8.7	6.6	4.6	2.0	26	25	24
3:25	11.4	11.7	12.0	12.2	12.3	12.6	8.7	7.2	5.1	2.5	27	26	24
3:35	11.2	11.4	11.7	12.0	12.2	12.4	8.7	6.6	5.1	2.5	26	25	22
3:45	11.2	11.5	11.7	11.8	12.0	12.4	8.7	7.2	5.1	2.5	26	25	24
3:55	11.0	11.3	11.5	11.7	11.9	12.4	8.7	6.6	4.6	2.5	26	25	24
4:05	10.9	11.1	11.3	11.6	11.7	12.1	8.7	6.6	5.1	2.5	26	25	23
4:15	10.9	10.9	11.1	11.4	11.5	11.8	9.2	6.6	5.1	2.5	26	25	24
4:25	11.1	11.2	11.2	11.3	11.4	11.6	9.7	7.2	5.1	2.0	26	25	25
4:35	11.4	11.2	11.2	11.2	11.3	11.6	9.7	7.2	5.1	2.0	26	25	25
4:45	11.1	11.3	11.3	11.3	11.4	11.6	9.7	7.2	5.1	2.5	26	25	23
4:55	11.2	11.3	11.4	11.5	11.5	11.9	9.7	7.7	5.6	3.0	26	24	24
5:05	11.0	11.2	11.3	11.4	11.6	12.1	9.7	7.7	5.6	3.0	26	24	23
5:15	10.9	11.0	11.3	11.5	11.7	12.2	9.7	7.7	5.6	3.6	25	24	24
5:25	11.1	11.3	11.5	11.6	11.9	12.4	9.7	7.7	6.1	3.6	25	24	23
5:35	10.9	11.1	11.5	11.8	12.1	12.5	9.2	7.2	6.1	3.0	25	23	23
5:45	11.1	11.2	11.6	11.8	12.1	12.6	8.7	6.1	5.1	3.0	25	23	22
5:55	11.0	11.3	11.7	11.9	12.2	12.8	8.2	6.1	5.1	3.0	24	23	23
6:05	11.2	11.4	11.8	12.0	12.3	12.8	8.2	6.1	5.1	2.5	25	23	22
6:15	11.3	11.5	11.9	12.1	12.4	12.9	8.2	6.1	4.6	2.5	24	23	22
6:25	11.2	11.5	11.9	12.1	12.4	13.0	8.2	6.1	5.1	3.0	24	22	22
6:35	11.2	11.5	11.9	12.2	12.5	13.1	8.2	6.6	5.1	3.0	24	22	21
6:45	11.3	11.6	12.0	12.2	12.5	13.0	8.7	6.6	5.1	3.6	24	22	21
6:55	11.3	11.7	12.1	12.3	12.6	13.2	8.2	6.6	5.1	3.0	24	23	21
7:05	11.5	11.8	12.3	12.5	12.8	13.3	8.2	6.6	5.1	2.5	24	23	23
7:15	11.7	12.0	12.4	12.7	13.0	13.6	8.2	6.6	5.6	3.0	24	23	22
7:25	11.7	12.1	12.6	12.9	13.2	13.7	8.7	7.2	6.1	3.6	24	23	24
7:35	11.7	12.1	12.6	12.9	13.2	13.7	9.2	8.2	7.2	4.6	24	24	23
7:45	11.7	12.1	12.5	12.8	13.2	13.8	9.2	7.7	7.2	4.6	24	24	23

7:55	11.7	12.0	12.6	12.9	13.2	13.7	9.2	7.7	7.2	4.6	24	24	21
8:05	11.6	12.0	12.6	12.8	13.1	13.8	9.2	7.7	7.2	4.6	23	22	24
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8:35	11.9	12.3	12.8	13.0	13.4	14.3	9.2	8.2	7.7	4.6	24	24	23
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10:05	12.8	13.2	13.7	14.1	14.5	15.6	9.2	8.7	8.2	4.6	25	24	23
10:15	12.9	13.3	13.8	14.2	14.6	15.5	9.2	9.2	9.2	5.6	26	25	25
10:25	12.9	13.3	13.7	14.3	14.8	15.8	9.2	9.7	9.2	5.6	25	25	23
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20:45	12.2	12.6	13.0	13.3	13.6	14.0	12.3	10.8	9.7	4.6	27	26	25
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Bibliographic Data Sheet **Risø-R-1054(rev.1)(EN)**

Title and authors

The Copenhagen Tracer Experiments: Reporting of Measurements

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ISBN	ISSN
87-550-3101-3	0106-2840

Department or group	Date
Wind Energy Department	August 2002

Groups own reg. number(s)	Project/contract No(s)

Pages	Tables	Illustrations
74	39	11

Abstract (max. 2000 characters)

This is the comprehensive data report from a series of tracer experiment carried out in the Copenhagen area in 1978/79 under neutral and unstable atmospheric conditions. The report contains sulphurhexafluoride of tracer concentrations and meteorological measurements The tracer was released without buoyancy from a tower at a height of 115 meters and then collected 2-3 meters above ground-level at positions in up to three crosswind arcs of tracer sampling units, positioned 2-6 km from the point of release. Three consecutive 20 min averaged tracer concentrations were measured, allowing for a total sampling time of 1 hour. The site was mainly residential having a roughness length of 0.6 m. The meteorological measurements performed during the experiments included standard measurements along the tower of tracer release as well as the three-dimensional wind velocity fluctuations at the height of release.

Descriptors INIS/EDB

AIR POLLUTION, BOUNDARY LAYERS, DISPERSIONS, EXPERIMENTAL DATA, METEOROLOGY, SAMPLING, SULPHURHEXAFLUORIDE, TRACER TECHNIQUES, TURBULENCE, URBAN AREAS